SAN DIEGO REGIONAL TRANSPORTATION STUDY

SAN DIEGO REGIONAL TRANSPORTATION STUDY

VOLUME II: FINAL REPORT TECHNICAL APPENDIX

PREPARED FOR:
SAN DIEGO ASSOCIATION OF GOVERNMENTS

SUBMITTED BY:

600 B Street, Suite 2202
San Diego, CA 92101
802 295 4999
www.rsginc.com

RSG
the science of insight

This page intentionally left blank.

CONTENTS

List of Figures

ACKNOWLEDGEMENTS

The San Diego Regional Transportation Study was funded and supported by the San Diego Association of Governments (SANDAG). RSG (Resource Systems Group, Inc.) and the rest of the consultant team acknowledge their vision and support for this project.

Consultant Team

RSG

ChenRyan Associates

Cook + Schmid

ETC Institute

APPENDIX A. QUESTIONNAIRES

The study had four questionnaire documents, each of which involved a significant amount of computer programming and “skip logic” to make the questionnaires dynamic and self-validating to the maximum extent possible:

1. The **recruit survey questionnaire** (also known as part one of the study)
    a. This document comprises the main study, the military add-on study, and the active transportation add-on study.
2. **Two versions of the travel diary questionnaire** (also known as part two of the study)
    a. The **rMove smartphone travel diary**
        i. This document covers the main study and participants involved with the active transportation add-on study.
    b. The **online travel diary**
        i. This document covers the main study and participants involved with the military add-on study.
3. The **bicycle intercept survey** questionnaire for the active transportation add-on study

This page intentionally left blank.

Privacy Policy

San Diego Regional Transportation Study Privacy Statement

SUMMARY

The San Diego Association of Governments is conducting this study through © Resource Systems Group, Inc. 2016.

Resource Systems Group (RSG) and SANDAG will never sell, trade, or otherwise share any personal information collected in its surveys with any third party.

RSG and SANDAG will never spam you, advertise to you, or otherwise contact you outside of this survey without your explicit and direct permission.

Any and all information collected during this survey will only be presented as part of an aggregate sample. At no time will individual responses be connected to survey takers' personal information.

During the study, we need your name and contact information in order to reach you; this information will be destroyed at the conclusion of the study. Your survey responses will never be sold or shared.

PRIVACY STATEMENT IN DEPTH

We are committed to your privacy and we take it very seriously. This statement is intended to provide you with information and understanding about how we collect and safeguard personal information that is used as part of the this study.

THE INFORMATION WE COLLECT AND WHAT WE DO WITH IT

Through this study, we will collect information such as your email address, home or work location, and a variety of demographic information (e.g., gender, age, household income) that will allow us to qualify you for the survey, tailor survey questions, or ensure we have collected a sample that provides representation across a variety of characteristics. Once you are qualified to participate in a survey, you may be asked to provide additional demographic data, express opinions, and register preferences. The information gathered is aggregated, analyzed, and summarized on behalf of SANDAG. This information is always presented in summary fashion and never contains any personally identifiable information. Participation in these surveys is completely voluntary, and you therefore have a choice whether or not to disclose this information requested.

INFORMATION COLLECTED TO MAKE YOUR SURVEY EXPERIENCE MORE PLEASANT

During the course of our surveys, we may passively collect information about your internet browser and computer settings that makes your survey experience more pleasant. In addition to improving your survey experience, we use this information, which does not identify individual users, to analyze trends, administer the site, and track users' movements around the site.

CHANGING OR DELETING PERSONAL INFORMATION

If your personal information changes, if you no longer desire to participate in this study, or if you have inquiries or complaints, please contact us via email at study@sandag.org

SECURITY

We follow generally accepted industry standards to protect the personal information submitted to us, both during transmission and once we receive it. No method of transmission over the Internet, or method of electronic storage, is 100% secure, however. Therefore, while we strive to use commercially acceptable means to protect your personal information, we cannot guarantee its absolute security.

CHANGES IN THIS PRIVACY STATEMENT

RSG and SANDAG reserve the right to change this privacy policy. These changes will be posted clearly on the study's websites and other places we deem appropriate so that you are aware of what information we collect, how we use it, and under what circumstances, if any, we disclose it.

LEGAL DISCLAIMER

We reserve the right to disclose your personally identifiable information as required by law, and when we believe that disclosure is necessary to protect our rights and/or to comply with a judicial proceeding, court order, or legal process served on our website.

SANDAG PRIVACY POLICY

In addition to the privacy policy for this study, you are welcome to review the SANDAG Privacy Policy online, at http://www.sandag.org/index.asp?fuseaction=utility.privacy

CONTACT US

If you have any questions or suggestions regarding this privacy policy, please contact us at:
Resource Systems Group, Inc.
600 B Street, Suite 2202
San Diego, CA 92101
Phone: 1 (844) 468-2570
Email: study@sandag.org

Para obtener información sobre la Política de Privacidad, llame al 1 (844) 468-2570

If participant is not in the military study:

Please specify your preferred language for future communications:
Por favor especifique su idioma de preferencia para recibir información:

- o English (Inglés)
- o Spanish (Español)
- o 97 Other. Please specify _____
  (Otro. Por favor especifica)

Previous Next

If user selects language_pref = Spanish

To provide the best Spanish language experience while completing this survey, we suggest calling our toll-free number at 1 (844) 468-2570.

Por favor llame de manera gratuita al 1 (844) 468-2570 para iniciar la encuesta.

If you are comfortable completing this survey in English, please click Next.

If user selects language_pref = Other

[in English:] **You are welcome to use the Google Translate button above to translate this survey into your preferred language.**

Once you are ready, please click Next to continue the survey.

If user selects language_pref = English, please skip this page and proceed to [a01_intro]

If participant is in the military study:

This survey is designed for anybody residing (i.e. living) on a military installation within the San Diego region.

On which military installation do you currently reside?

What is your currently affiliation with the military?

Previous Next

military_screen answer options

military_base

- o Marine Corps Air Station Miramar
- o Marine Corps Base Camp Pendleton
- o Marine Corps Recruit Depot San Diego
- o Naval Base Coronado / North Island
- o Naval Base Point Loma
- o Naval Base San Diego
- o Naval Medical Center San Diego
- o US Coast Guard Station San Diego
- o 97 Other. Please specify _____
- o 96 None. I do not currently reside on a military installation. → Terminate

military_affiliation

- o No current affiliation with the military
- o Active Duty within the San Diego region
- o Active Duty outside of the San Diego region (e.g. currently deployed or stationed elsewhere) → Terminate
- o Reserve or National Guard
- o Department of Defense civilian workforce and/or contractor
- o Veteran
- o 97 Other affiliation (e.g. spouse of active military)

If participant in the military study terminates

Thank you for your interest in participating, but at this time we are only accepting survey responses from people residing on military installations within the San Diego region.

If you know anybody who meets this criteria, please forward them the study website and encourage their participation (https://study.sandag.org/military). Thank you.

Previous Next

Before you begin, a few notes about this study.

Study Purpose: The purpose of the San Diego Regional Transportation Study is to better understand the travel patterns and travel needs of residents like you. Your participation is very important and will help to inform future transportation decisions in the San Diego region.

Study Manager: This study is being conducted by © Resource Systems Group, Inc. 2016, on behalf of the San Diego Association of Governments (SANDAG).

Questions or Concerns: If you have any questions or concerns, please email study@sandag.org <if not in Military or AT study>or call toll-free: 1 (844) 468-2570. You may also refer to the links at the bottom of this page for more information.

How do I go from question to question? Use the “Next” button to advance to the next page. If you need to back up, use the “Previous” button. Please do not use your web browser’s “Back” button.

if military study, do not show text below (b/c they will not be able to restart their surveys):

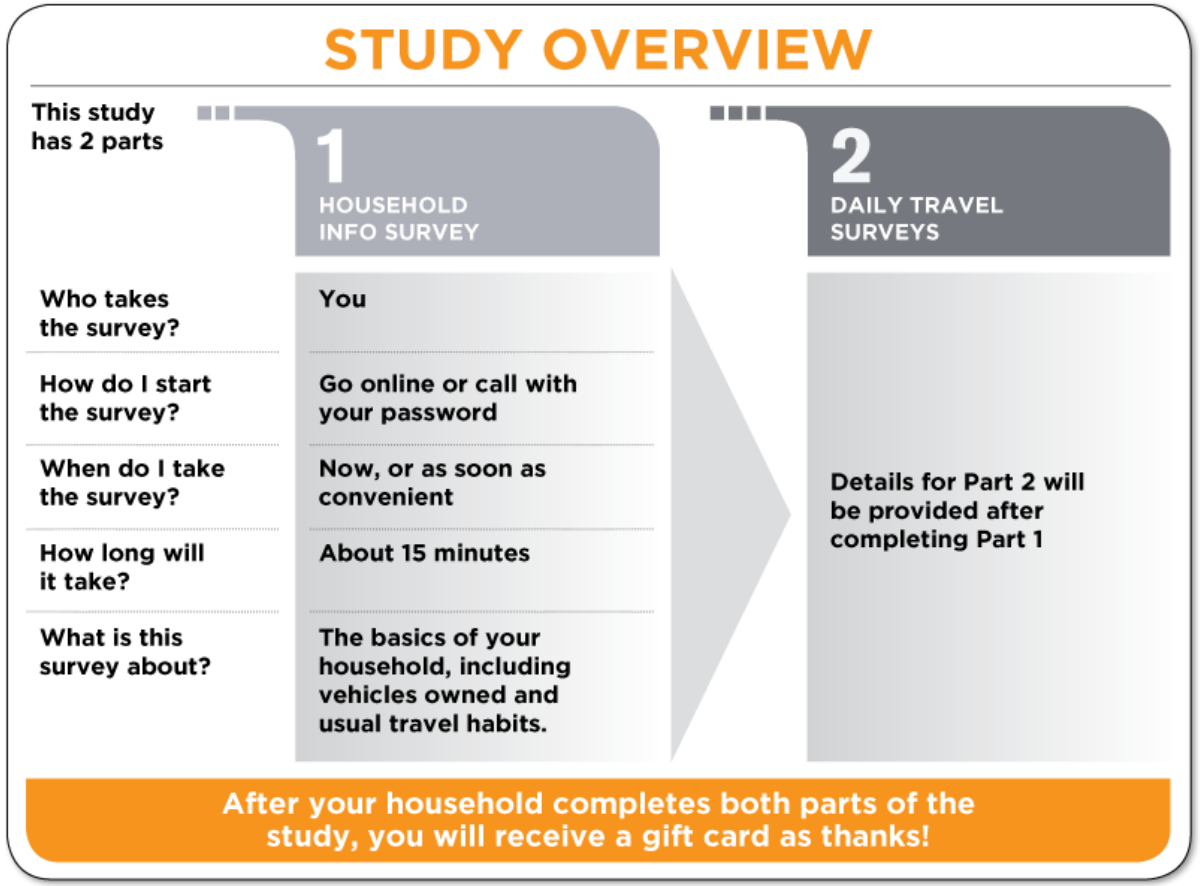
What if I need to stop taking the survey before I finish? All of your answers are automatically saved, so you can return to the survey later and pick up from where you left off.

Previous Next

This is a "generic" study overview graphic. A more detailed graphic is shown later to illustrate the steps for participation for the Online Diary HHs or rMove HHs.

If General HTS → Show General Study overview
If Military Study → Do not show this page.
If AT Study → Do not show this page

Thank you for beginning Part 1 of the study today!



Previous Next

Show this page only if military study

This study has **two parts**. The **first part** will cover the basics of your household, including vehicles owned and usual travel habits. The **second part** will ask you to recall the details for each trip you made during a recent weekday. The study should take about 15 minutes overall and should be completed in one sitting.

After completing the study, you will be eligible for a raffle to win one of two iPad Air 2s.

Previous Next

Skip if in AT study (this is asked in intercept):

How many motor vehicles are there in your household?

Please include all motor vehicles that your household regularly uses, such as cars, trucks, SUVs, vans, RVs, & motorcycles (whether owned, leased, or a company vehicle).

Please do NOT include uninspected or unregistered motor vehicles, such as ATVs, snowmobiles, trailers, golf carts, or watercraft. If military: Only report vehicles that you use to travel outside of a military installation.

- o 0 (no vehicles)
- o 1
- o 2
- o 3
- o 4
- o 5
- o 6
- o 7 or more vehicles

"household" pop-up text:
for all except military study:
Your household includes everyone who lives in the same dwelling unit at least part of the week. This includes relatives, roommates, or live-in household help.
for military study:
Your household includes everyone who lives in the same dwelling unit at least part of the week. If you live in a barracks, please only count yourself.

These questions are shown for each vehicle in the household. This page is only shown if the household has 1 or more vehicle(s).

If in AT study show this line as well: You previously told us you had <n> vehicles in your household.
Please tell us about the vehicles in your household.
Viewing <x> of <n> vehicle(s).

Year

Make

Model

Fuel type

How did you obtain this vehicle?

Does this vehicle have a toll transponder (e.g., *FasTrak*)?

Does this vehicle have a permit for parking at your residence?

[If pass = yes] About how much does this parking permit cost your household per month?
Please round to the nearest dollar.

$ Numeric entry: 1-999

☐ Not sure/ included in lease or mortgage

Previous Next

vehicle_details answer options

Year:

- List every year between 1980-2016, in reverse chronology. “1980 or older” is listed as the last/bottom choice. The 2017 vehicle database will be available for our Fall 2016 data collection (but not the pilot in Spring 2016).

Make:

- Dynamic list of vehicle makes (e.g. Honda, Ford), including “Other” and “Motorcycle”; dynamically populated based on selected vehicle year

Model:

- Dynamic list of vehicle models, dynamically populated based on selected vehicle make

Fuel:

- Gas
- Diesel
- Hybrid
- Electric
- Flex Fuel
- 97 Other

toll_transponder:

- No
- Yes

Vehicle_details_obtain

- Own
- Lease
- Employer/Institutional Car
- 97 Other

Resident parking pass:

- Yes, vehicle has permit for parking at/near residence
- No pass needed – typically park at residence
- No pass needed – typically park on street
- No pass needed – typically park elsewhere

How many bicycles (in working order) are there in your household?

Please include all types of adult and child bicycles (road, mountain, commuter, etc.)

- o 0 (no bicycles)
- o 1
- o 2
- o 3
- o 4
- o 5
- o 6
- o 7
- o 8 or more bicycles

"household" pop-up text:
for all except military study:
Your household includes everyone who lives in the same dwelling unit at least part of the week. This includes relatives, roommates, or live-in household help.
for military study:
Your household includes everyone who lives in the same dwelling unit at least part of the week. If you live in a barracks, please only count yourself.

Previous Next

How many total people (including yourself) currently live in your household?

Do not show clarifying text below if in military study:
Please include yourself, all other adults, all children, and all roommates who normally reside with you in your home.

Please do NOT include people who currently live away from home (e.g., living at college).

- o 1 (I am the only person)
- o 2 people
- o 3 people
- o 4 people
- o 5 people
- o 6 people
- o 7 people
- o 8 people
- o 9 people
- o 10 people
- o 11 people
- o 12 or more people

"household" pop-up text:
for all except military study:
Your household includes everyone who lives in the same dwelling unit at least part of the week. This includes relatives, roommates, or live-in household help.
for military study:
Your household includes everyone who lives in the same dwelling unit at least part of the week. If you live in a barracks, please only count yourself.

Previous Next

For each HH member, starting with the survey taker.

Please tell us about <yourself / the other people in your household>.

Viewing <x> of <n> member(s).

Nickname, first name, or initials

[for people other than survey taker/Person 1] Relationship to you

Gender

Age

[if 16+] **Primary** type of employment

[*if 16+ and employed full/part)*] Number of jobs

[if 16+ and employed full/part/volunteer] [skip for Person 1 in Military study] Current Military / Armed Forces Affiliation?

[if 18+] Currently a student?

[if <18 or (age 18+ and student)] **Primary** type of school

[if 18+] Highest level of education completed

[if 16+] Has a valid driver's license?

[if numvehs > 0 and has license] Vehicle used most often

Previous **Next**

member_details answer options

relationship:

- o Husband/Wife/Partner
- o Son/Daughter/In-law
- o Mother/Father/In-law
- o Brother/Sister/In-law
- o Other relative
- o Roommate/Friend
- o Household help
- o 97 Other

age:

Only show to hh members 2-n:

- o Under 5 years old
- o 5–15 years
- o 16–17 years

Show to all (including hh member 1):

- o 18–24 years
- o 25–34 years
- o 35–44 years
- o 45–49 years
- o 50–54 years
- o 55–59 years
- o 60–64 years
- o 65–74 years
- o 75–79 years
- o 80–84 years
- o 85 years or older

gender:

- o Male
- o Female

employment:

- o Employed full-time (paid) 35+ hours/week
- o Employed part-time (paid) up to 35 hours/week
- o Unpaid volunteer or intern
- o Not currently employed

jobs_count:

- o 1 job
- o 2 jobs
- o 3 jobs
- o 4 jobs
- o 5 or more jobs

Currently a student:

- o Not a student
- o Part-time student
- o Full-time student

Student, school type:

See following slide

education:

- o Less than high school
- o High school graduate/GED
- o Some college
- o Vocational/technical training
- o Associates degree
- o Bachelor degree
- o Graduate/post-graduate degree

license:

- o Yes (license or learner's permit)
- o No

vehicle:

- o [List of reported household vehicles]
- o A car share vehicle (e.g. Car2Go)
- o 97 Other vehicle
- o 96 None

military

- o No current affiliation with the military
- o Active Duty within the San Diego region
- o Active Duty outside of the San Diego region (e.g. currently deployed or stationed elsewhere)
- o Reserve or National Guard
- o Department of Defense civilian workforce and/or contractor
- o Veteran
- o 97 Other affiliation (e.g. spouse of active military)

member_details answer options

Master List of Answer Choices for School Type

1. Cared for at home
2. Daycare outside home
3. Preschool
4. Kindergarten–Grade 5 (public or private)
5. Kindergarten–Grade 5 (home school)
6. Grade 6–Grade 8 (public or private)
7. Grade 6–Grade 8 (home school)
8. Grade 9–Grade 12 (public or private)
9. Grade 9–Grade 12 (home school)
10. Vocational/technical school
11. 2-year college
12. 4-year college
13. Graduate or professional school

97. Other

Age of Respondent	**"Currently a Student" Question [student]**	**If <5 y/o: How does child spend their day? If ≥5 y/o: What type of school does this member currently attend?**
Under 5 years old	Question not shown	Show Question: Answer choices are: - Cared for at home - Daycare outside home - Preschool - Kindergarten–Grade 5 (public or private) - Kindergarten–Grade 5 (home school) - Other
5-15 years	Question not shown	Show Question: Answer choices are: - Cared for at home - Daycare outside home - Preschool - Kindergarten–Grade 5 (public or private) - Kindergarten–Grade 5 (home school) - Grade 6–Grade 8 (public or private) - Grade 6–Grade 8 (home school) - Grade 9–Grade 12 (public or private) - Grade 9–Grade 12 (home school) - Other
16-17 years	Question not shown	Show Question: Answer choices are: - Grade 9–Grade 12 (public or private) - Grade 9–Grade 12 (home school) - Vocational/technical school - 2-year college - 4-year college - Graduate or professional school - Other
18+-years	Show Question to all HH members (including HHmember1) Show Question: Answer choices are: - No, not a student - Part-time student - Full-time student	Show Question IF answer is YES am a full or part-time student: Answer choices are: - Grade 9–Grade 12 (public or private) - Grade 9–Grade 12 (home school) - Vocational/technical school - 2-year college - 4-year college - Graduate or professional school - Other

The questions on this page are all optional.

We ask them to help understand how closely the people who participate in this study represent the region's overall population.

Show for each HH member age 16+.

<HH member 1>:	Have a disability or illness that affects ability to travel?	Select… ▼
	[if age 18+] Height (without shoes)	1-9 ft 0-12 in
	[if age 18+] Weight in lbs (without shoes)	1-999
	[if age 18+] How physically active you are in a typical week?	Select… ▼
	Race/Ethnicity	❑American Indian/Alaska Native ❑Asian ❑…
<HH member 2-N>:	Have a disability or illness that affects ability to travel?	Select… ▼
	[if age 18+] Height (without shoes)	1-9 ft 0-12 in
	[if age 18+] Weight in lbs (without shoes)	1-999
	[if age 18+] How physically active you are in a typical week?	Select… ▼
	Race/Ethnicity	❑American Indian/Alaska Native ❑Asian ❑…

Previous Next

Sensitive / Optional Questions

disability

- o No
- o Yes
- o 99 Prefer not to answer

phys_active

- o I rarely or never do any physical activity
- o I do some light or moderate physical activities
- o I do some vigorous physical activities
- o 99 Prefer not to answer

ethnicity

- o American Indian / Alaska Native
- o Asian
- o Black / African American
- o Hispanic / Latino
- o Native Hawaiian / Pacific Islander
- o White
- o 97 Other
- o 99 Prefer not to answer

If hhsize = 1

Do you belong to any rideshare, carshare, bikeshare, or vanpool programs in the San Diego region?
Please select all that apply.

If hhsize = 2+

Does anyone in your household belong to any rideshare, carshare, bikeshare, or vanpool programs in the San Diego region? Please select all that apply.

- ❑ Yes, belong to an on-demand taxi ~~or ride share~~ service (e.g., Uber, Lyft, Opoli)
- ❑ Yes, belong to carshare program (e.g., Car2Go, ZipCar)
- ❑ Yes, belong to bikeshare program (e.g., DecoBike)
- ❑ Yes, belong to vanpool program (e.g., Rideshare by Enterprise, vRide)
- ❑ No, my household does not belong to any of these programs

Previous Next

How often does your household use public transit in the San Diego region?

Examples of public transit include: bus, Amtrak, Trolley, SPRINTER, COASTER, Coronado Ferry, etc.

Please answer for each person age 16 or older.

Show for each HH member age 16+. Do not show for HH members age 0-15

<HH member 1>:

[age 16+] Uses transit how often? Select… ▼

[if uses transit 1+ days/week] Uses a transit pass? Select… ▼

<HH member 2-n>:

[age 16+] Uses transit how often? Select… ▼

[if uses transit 1+ days/week] Uses a transit pass? Select… ▼

Previous Next

Transit details answer options

transit_freq

- o 6–7 days a week
- o 4–5 days a week
- o 2–3 days a week
- o 1 day a week
- o 1–3 days per month
- o Less than monthly
- o Never

transit_pass

- o Monthly Adult Regional Compass Card: $72
- o Monthly Adult Premium Compass Card: $100
- o Monthly Adult COASTER Compass Card: by zone
- o MTS College Semester Pass
- o MTS College Monthly Pass
- o UC San Diego Annual U-Pass
- o *If < age 18:* Monthly Youth Regional Compass Card: $36
- o *If < age 18:* Monthly Youth Premium Compass Card: $50
- o *If < age 18:* Monthly Youth COASTER Compass Card: $82.50
- o Monthly Senior/Disabled/Medicare Regional Compass Card: $18
- o Monthly Senior/Disabled/Medicare Premium Compass Card: $25
- o Monthly Senior/Disabled/Medicare COASTER Compass Card: $41.25
- o Other transit pass (e.g. free, employee, etc.)
- o Do not have a transit pass
- o 98 Don’t know

Which of the following tools, apps, or websites do you personally use to help plan your transportation decisions? Select all that apply.

- ❑ Paper maps or atlas
- ❑ Vehicle/in-car navigation system
- ❑ 511sd.com
- ❑ Apple Maps
- ❑ Car2Go
- ❑ Google Maps
- ❑ iCommuteSD.com
- ❑ Lyft
- ❑ MapMyRun / MapMyRide / MapMyWalk
- ❑ MapQuest
- ❑ MTS (sdmts.com)
- ❑ North County Transit District (NCTD) (GoNCTD.com)
- ❑ Uber
- ❑ Waze
- ❑ 97 Other. Please specify:_____
- ❑ 96 None of the above

Previous Next

Only show tools selected on the previous page.

How often do you use the following tools, apps, or websites to help plan your transportation decisions?

	Less than Once a Week	A Few Times Per Week	Daily or More
Show tools selected on previous page (show in same order as previous page)	○	○	○
……	○	○	○
Other tool (show if selected on previous page)	○	○	○

Previous Next

Page/question only shown if HH member has student status. If student status equals any of following – question is not shown: Cared for at home, Kindergarten-Grade 5 (home school), Grade 6-Grade 8 (home school), or Grade 9-Grade 12 (home school)

Travel to/from school impacts many families' transportation decisions.

If HH size = 1: **How often do you travel to school to attend class or other events such as study group?**

If HH size = 2+ **How often does each person travel to their own daycare/school/college to attend class or other events such as study group?** Please answer for each person in your household who travels to school.

<HH student 1 Name>:

[student, not homeschooled] Goes to school (usual location) how often?	Select… ▼
[student, not homeschooled] Goes to another school site/campus (not usual location) how often?	Select… ▼
[if travels to school (not online only)] Usually travels to school how?	Select… ▼
[if school type = daycare] What time does the daycare open?	Select… ▼
[if school type = daycare] What time does the daycare close (can't pick-up any later)?	Select… ▼

Repeat sequence for each student in the household who is not homeschooled

Previous Next

School details answer options

Numbers in red indicate db values when different from display order – do not show numbers on screen

school_freq:

- 6–7 days a week
- 5 days a week
- 3–4 days a week
- 1–2 day a week
- 1–3 days per month
- Less than monthly
- *<if age 16+>* Never, only takes online classes

other_school

- Never, only 1 school location
- 1 or more days a week
- A few times per month
- Less than monthly

school_mode

See slide 31 (with work_commute answers)

daycare_early (Dropdown with 15 min increments)

1. Before 6 a.m.
2. 6:00 a.m.
3. 6:15 a.m.
4. 6:30 a.m.
5. 6:45 a.m.
6. 7:00 a.m.
7. 7:15 a.m.
8. 7:30 a.m.
9. 7:45 a.m.
10. 8:00 a.m.
11. 8:15 a.m.
12. 8:30 a.m.
13. After 8:30 a.m..

daycare_late (Dropdown with 15 min increments)

- Before 5:00 p.m.
- 5:15 p.m.
- 5:30 p.m.
- 5:45 p.m.
- 6:00 p.m.
- 6:15 p.m.
- 6:30 p.m.
- 6:45 p.m.
- 7:00 p.m.
- 7:15 p.m.
- 7:30 p.m.
- After 7:30 p.m.

Cycle this page/question for each HH member who travels to school. People who only take online classes, are home-schooled/in-home sitter, or are not students do not see this question.

Please share where <name>'s usual daycare/school/college is located.

Locate by address | Locate on the map

<if locate by address>

To search by address or business name:

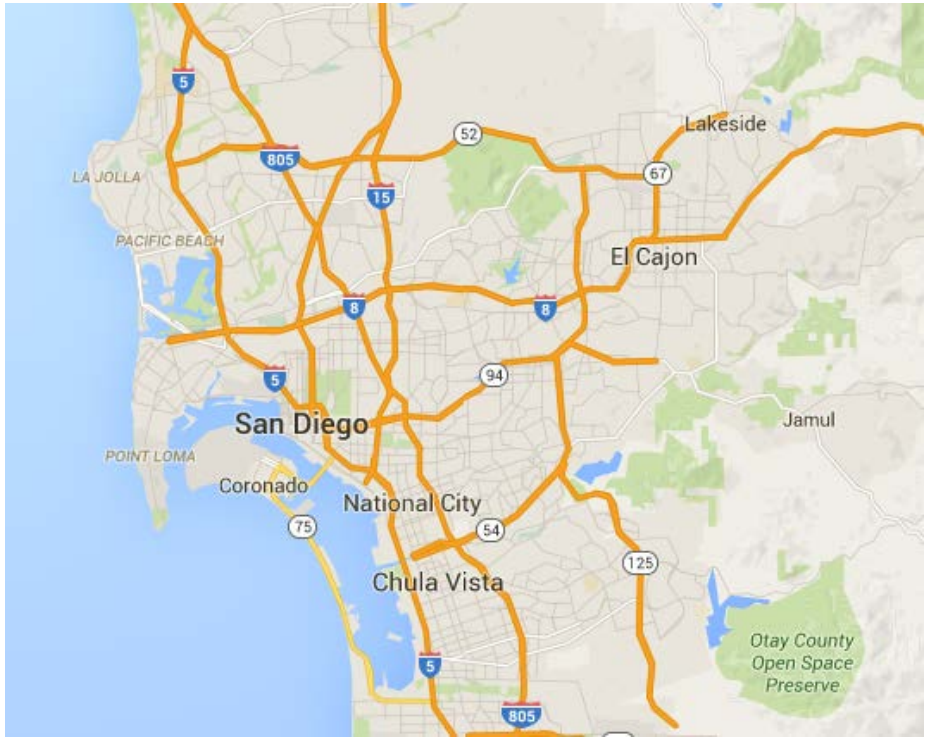
1. Enter a street address, nearest intersection, or business name in the box below
2. Click on the correct address from the list of search results that appear
3. Click "Next" to continue

- Example: Roosevelt Middle School, San Diego, CA
- Example: 1600 Pacific Hwy, San Diego, CA 92101
- Example: Montezuma Rd & 55th St, San Diego, CA 92115

<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a 'marker.'
3. Continue clicking until you locate the correct place.



Previous | Next

Cycle this page/question for each HH member who goes to other_school 1 or more days per week or more (skip if a few times per month, less than monthly, or never).

You also said <name> sometimes goes to another school besides the primary location.

Please share where <name>'s OTHER daycare/school/college is located.

If you go to many different locations, please locate the one you went to most recently.

Locate by address | Locate on the map

<if locate by address>

To search by address or business name:

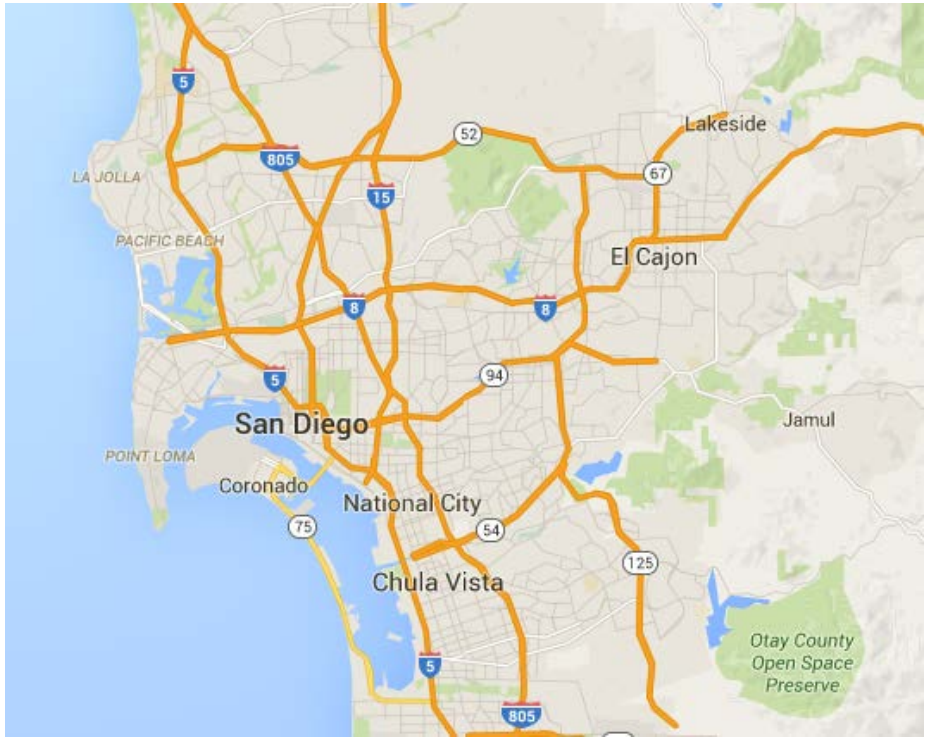
1. Enter a street address, nearest intersection, or business name in the box below
2. Click on the correct address from the list of search results that appear
3. Click "Next" to continue

- Example: Roosevelt Middle School, San Diego, CA
- Example: 1600 Pacific Hwy, San Diego, CA 92101
- Example: Montezuma Rd & 55th St, San Diego, CA 92115

<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a 'marker.'
3. Continue clicking until you locate the correct place.



Previous **Next**

Page/question is shown for each HH member with employment status (=full-time/part-time/volunteer).

If HH size = 1: **Please describe your job.**

If HH size = 2+ **Please describe each person's job.**

For anyone with more than one job, please answer for the **primary** job (where works most hours per week).

<HH worker/volunteer 1 Name>:

[all except active duty currently deployed] Type of workplace location? Select… ▼

[all except active duty military local or deployed] Occupation? Select… ▼

[all except active duty military local or deployed] Industry? Select… ▼

"Occupation" pop-up text:

"Occupation" describes the kind of work the person does on the job, which may be different from the larger industry in which the employer participates.

"Industry" pop-up text:

"Industry" describes the kind of business conducted by the person's employing organization.

Previous Next

Job_type answer options

Job_type

- o Has one work location (outside of home, may also telework)
- o Work location regularly varies (work in different offices or jobsites)
- o Work at home only (only telework or self-employed)
- o Drive/Travel for a living (e.g., bus/truck driver, salesman)

Occupation

- o 17 Architecture & Engineering
- o 27 Arts, Design, Entertainment, Sports, & Media
- o 37 Building & Grounds Cleaning/Maintenance
- o 13 Business & Financial Operations
- o 21 Community & Social Services
- o 15 Computer & Mathematical
- o 47 Construction & Extraction
- o 25 Education, Training, & Library
- o 45 Farming, Fishing, & Forestry
- o 35 Food Preparation & Serving Related
- o 29 Healthcare Practitioners & Technical
- o 31 Healthcare Support
- o 49 Installation, Maintenance, & Repair
- o 23 Legal
- o 19 Life, Physical, & Social Science
- o 11 Management Occupations
- o 55 Military
- o 43 Office & Administrative Support
- o 39 Personal Care & Service
- o 51 Production
- o 33 Protective Service
- o 41 Sales & Related
- o 53 Transportation & Material Moving
- o 97 Other
- o 98 Don’t Know

Industry

- o Accommodation (e.g., hotels/motels)
- o Administrative, Support, & Waste Management Services
- o Agriculture, Forestry, Fishing, & Hunting
- o Arts, Entertainment, & Recreation
- o Construction
- o Education Services
- o Food Services & Drinking Places
- o Finance & Insurance
- o Health Care & Social Assistance
- o Information
- o Management of Companies & Enterprises
- o Manufacturing
- o Military
- o Mining, Quarrying, & Oil/Gas Extraction
- o Other Services
- o Professional, Scientific, & Technical Services
- o Public Administration
- o Real Estate, Rental, & Leasing
- o Retail Trade
- o Transportation & Warehousing
- o Utilities
- o Wholesale Trade
- o 97 Other
- o 98 Don’t Know

Previous Next

Page only shown if HH member has employment status (= full-time/part-time/volunteer) and NOT active duty currently deployed.
If person is in Military study, page only shown if the person is Employed and is NOT Active Duty.

If HH size = 1: **In a typical week, how many hours (in total) do you work and how do you commute to work?**

If HH size = 2+: **In a typical week, how many hours (in total) does each person work, and how does each person commute to work?**

Please answer for each person who is employed or a volunteer. For anyone with more than one job or more than one workplace, please answer for the **primary** job (work most hours per week).

<HH worker/volunteer 1 Name>:

[employed full/part/volunteer] Number of hours typically worked **each week**? Select… ▼

[if workplace=fixed or varied] Commutes to workplace how often? Select… ▼

[if commute_freq <> never] Commutes to workplace usually how? Select… ▼

[If commute_freq <> never] Amount of flexibility in arrival time at workplace? Select… ▼

[if commute_mode = 1-4] Pays for parking at workplace how? Select… ▼

[if work_park = 3-7] Personally pays per month to park at/near work how much? $ Numeric entry: 1-999
Please round to the nearest dollar.
☐ Not sure/don't remember

[if commute_mode = 1-4] How easy is it to find a parking spot at work? Select… ▼

[if job_type <> telework all the time] Telework frequency (instead of commuting to work that day)? Select… ▼

Does your employer subsidize any of the following methods of commuting? (Check all that apply)
☐ (see next page)
☐

Previous Next

Work_details answer options

Numbers in red indicate db values when different from display order – do not show numbers on screen

hours_work

- o *<show only if employment=full-time or volunteer>* 50 or more hours
- o *<show only if employment=full-time or volunteer>* 40–49 hours
- o *<show only if employment=full-time or volunteer>* 35-39 hours
- o *<show only if employment=part-time or volunteer>* 30–34 hours
- o *<show only if employment=part-time or volunteer>* 20–29 hours
- o *<show only if employment=part-time or volunteer>* 10–19 hours
- o *<show only if employment=part-time or volunteer>* Fewer than 10 hours
- o Hours vary greatly from week to week

commute_freq

- o 6–7 days a week
- o 5 days a week
- o 4 days a week
- o 2–3 days a week
- o 1 day a week
- o 9 days every 2 weeks
- o 1–3 days per month
- o Less than monthly

telecommute_freq *<do not show if job_type=Work at home only (only telecommute or self-employed)>*

- o *<show if commute_freq=3 days/week or less>* 6–7 days a week
- o *<show if commute_freq=3 days/week or less>* 5 days a week
- o *<show if commute_freq=3 days/week or less>* 4 days a week
- o 2–3 days a week
- o 1 day a week
- o 9 days every 2 weeks
- o 1–3 days per month
- o Less than monthly
- o Never

commute_mode

- o See next slide

work_flex

- o No flexibility (must always arrive on time)
- o Can arrive up to 15 minutes earlier/later
- o Can arrive up to 30 minutes earlier/later
- o Can arrive up to 45 minutes earlier/later
- o Can arrive more than an hour earlier/later
- o Sets own schedule (start time can vary greatly)

work_park

- o No cost to anyone to park at/near work
- o Employer pays all parking costs
- o Employer offers discounted monthly parking pass
- o Employer offers discounted other (e.g., daily, weekly) parking pass
- o Personally pay all cost for monthly parking pass
- o Personally pay all cost for daily parking
- o Personally pay for parking on other (daily, biweekly, annual) schedule
- o 96 Not applicable (N/A)
- o 98 Don't know

work_park2

- o Easy to find a parking spot
- o Difficult to find a parking spot (usually takes a few minutes)
- o 96 Not applicable (N/A)

commute_subsidy

- o See next slide

Travel mode answer option lists

Goal is consistency between school and work mode question.

school_mode

- o 1 Drive alone*<show if person has a drivers license>*
- o 2 Carpool with only family/household member(s)
- o 3 Carpool with at least one person not in household
- o 4 Motorcycle/moped/scooter*<show if person has a drivers license>*
- o 5 Walk/jog/wheelchair
- o 6 Bicycle
- o 7 School bus*<show only if person is under age 18>*
- o 8 Bus (public transit)
- o 9 Private shuttle bus
- o 10 Vanpool
- o 11 Light Rail (e.g., Trolley, SPRINTER)
- o 12 Intercity Rail (e.g., COASTER, Amtrak)
- o 13 Paratransit
- o 14 Taxi or other hired car service (e.g., Lyft, Uber)
- o 97 Other

commute_subsidy (select all that apply)

- o None
- o Free/Subsidized Parking
- o Free/Subsidized Transit Fare
- o Free/Subsidized Vanpool
- o Cash/incentives for carpooling, walking, or biking to work
- o 97 Other. Please specify _____
- o 98 Don't know

commute_mode

- o 1 Drive alone*<show if person has a drivers license>*
- o 2 Carpool with only family/household member(s)
- o 3 Carpool with at least one person not in household
- o 4 Motorcycle/moped/scooter*<show if person has a drivers license>*
- o 5 Walk (or jog/wheelchair)
- o 6 Bicycle
- o 7 School bus*<don't show school bus for commute_mode>*
- o 8 Bus (public transit)
- o 9 Private shuttle bus
- o 10 Vanpool
- o 11 Light Rail (e.g., Trolley, SPRINTER)
- o 12 Intercity Rail (e.g., COASTER, Amtrak)
- o 13 Paratransit
- o 14 Taxi or other hired car service (e.g., Lyft, Uber)
- o 97 Other

*Cycle this page/question for each HH member who commutes to a **fixed** workplace.*
People who work at home, drive for a living, or have varied workplaces skip this question.
Skip this page for people who are active duty currently deployed.

Please share where <name>'s primary workplace is located.

If military study : If you work on a military installation, please only identify the installation by name, rather than an exact location on that installation.

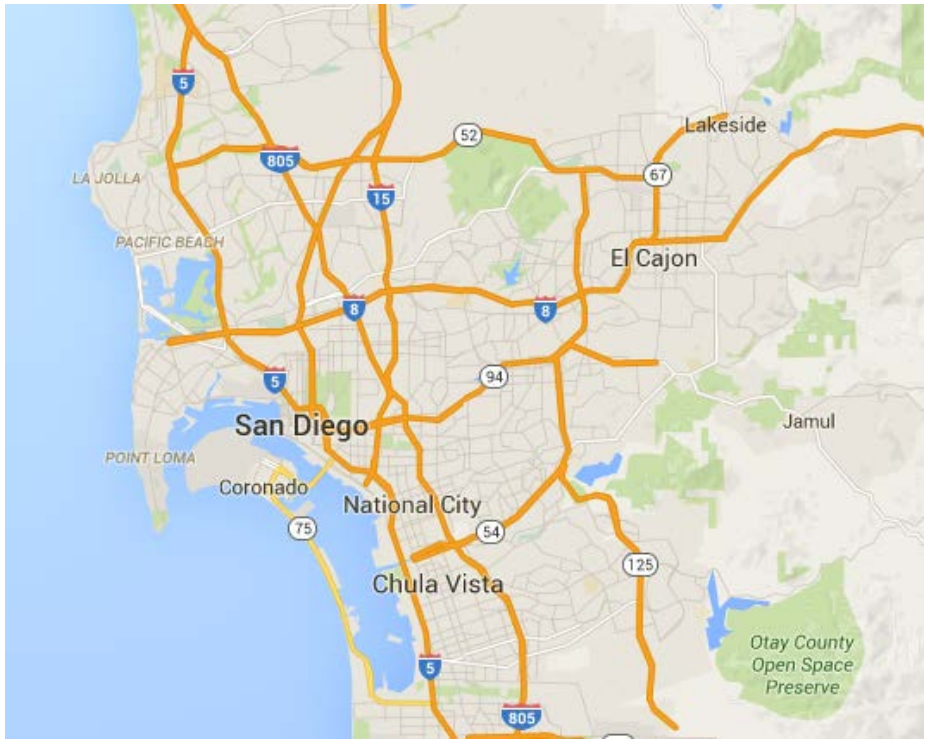
Locate by address | Locate on the map

<if locate by address>

To search by address or business name:

1. Enter a street address, nearest intersection, or business name in the box below
2. Click on the correct address from the list of search results that appear
3. Click "Next" to continue

- Example: 1600 Pacific Hwy, San Diego, CA 92101
- Example: Montezuma Rd & 55th St, San Diego, CA 92115
- Example: Marine Corps Air Station Miramar, San Diego, CA



<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a 'marker.'
3. Continue clicking until you locate the correct place.

Previous | Next

*Cycle this question for each HH member who has **2+ jobs**. Skip this page for people who are active duty currently deployed.*

You said <name> had more than one job.

Please share where <name>'s secondary workplace is located.

If you often go to many different locations, please locate the one you went to most recently.
If military study: If you work on a military installation, please only identify the installation by name, rather than the exact location on that installation.

Locate by address | Locate on the map

<if locate by address>

To search by address or business name:

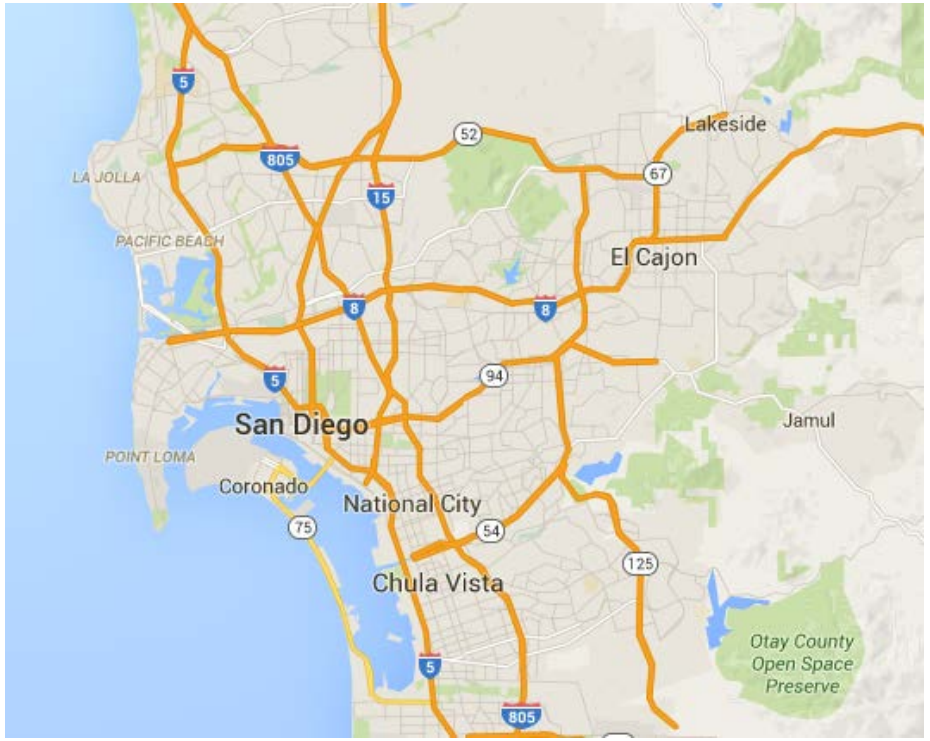
1. Enter a street address, nearest intersection, or business name in the box below
2. Click on the correct address from the list of search results that appear
3. Click "Next" to continue

- Example: 1600 Pacific Hwy, San Diego, CA 92101
- Example: Montezuma Rd & 55th St, San Diego, CA 92115
- Example: Marine Corps Air Station Miramar, San Diego, CA

<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a 'marker.'
3. Continue clicking until you locate the correct place.



Previous | Next

How long have you lived at your current residence <if not in military study:> **(the place where we sent your invitation to participate in this study)?**

<if not in military study:> If you received the study invitation in a PO Box, please answer for your residence closest to the Post Office where you collect your mail.

- o Less than a year
- o Between 1 and 2 years
- o Between 2 and 3 years
- o Between 3 and 5 years
- o Between 5 and 10 years
- o Between 10 and 20 years
- o More than 20 years

Previous Next

Do you own or rent your current residence?

- o Own/Buying (paying mortgage)
- o Rent
- o Provided by job or military
- o 97 Other
- o 99 Prefer not to answer

Previous Next

What type of place is your current residence?

- o Single-family house (detached house)
- o Townhouse (attached house)
- o Building with 3 or fewer apartments/condos
- o Building with 4 or more apartments/condos
- o Mobile home/trailer
- o Dorm, barracks, or institutional housing
- o 97 Other (including boat, RV, van, etc.)

Previous Next

If not in military study:

Please share where your current residence is located.

Note: This information is *only* used to make sure this study properly represents the San Diego region and is not shared.

<if locate by address>

To search by address or business name:

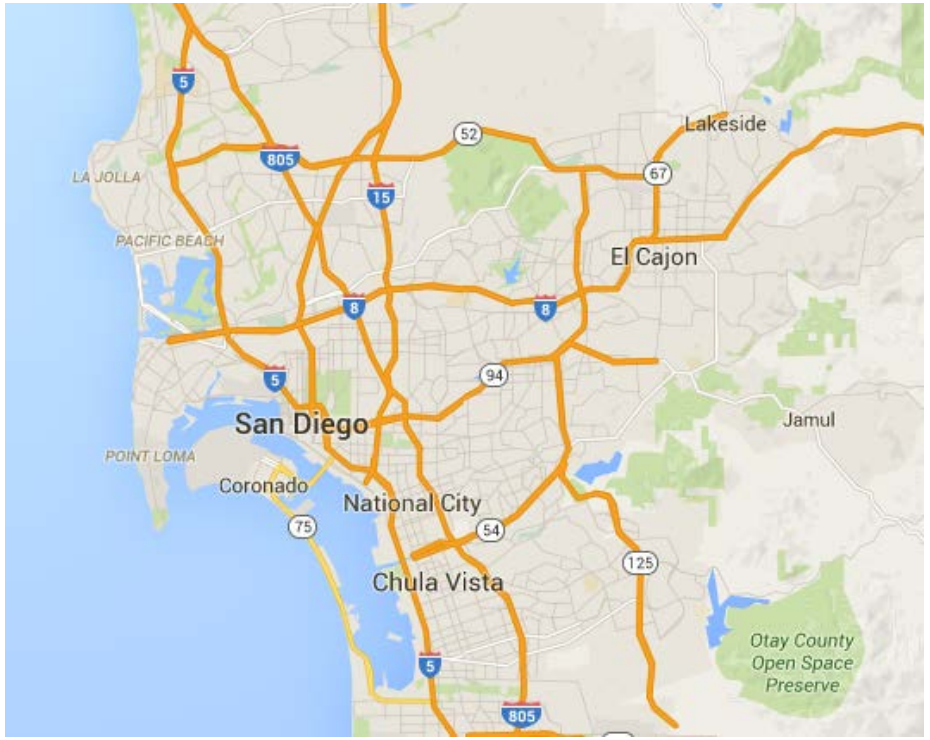
1. Enter a street address, or nearest intersection in the box below
2. Click on the correct address from the list of search results that appear
3. Click “Next” to continue

- Example: 1600 Pacific Hwy, San Diego, CA 92101
- Example: Montezuma Rd & 55th St, San Diego, CA 92115

<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a ‘marker.’
3. Continue clicking until you locate the correct place.



Previous Next

Does anyone in your household frequently spend the night at a second residence (that is <u>within</u> the San Diego region)?

Examples: the home of a child's other parent, the home of spouse/partner, an apartment near work, etc.

- ❑ <HH member 1 Name>
- ❑ <HH member 2 Name>
- ❑ <…>
- ❑ No one in my household has a secondary or part-time residence within the San Diego region

Previous Next

Ask for each person where secondhome = true
The map is pre-populated after the first person provides the second home

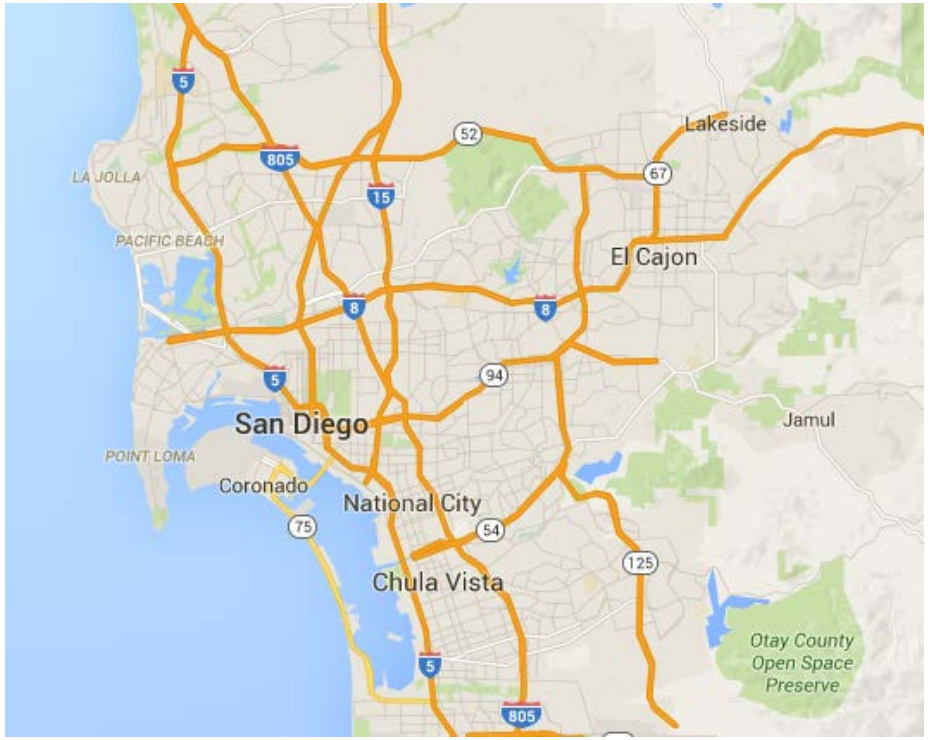
Please share where <Name>'s secondary or part-time residence is located.

<if locate by address>

To search by address or business name:

1. Enter a street address or nearest intersection in the box below
2. Click on the blue search button to the right of the box
3. Click on the correct address from the list of search results that appear
4. Click "Next" to continue

- Example: Montezuma Rd & 55th St, San Diego, CA 92115



<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a 'marker.'
3. Continue clicking until you locate the correct place.

Previous Next

In 2015, what was your household's total annual income (from all sources) before taxes or other deductions from pay?

Note: This information is *only* used to make sure this study properly represents the San Diego region. Please click here to view our privacy policy.

- o Under $15,000
- o $15,000–$29,999
- o $30,000–$44,999
- o $45,000–$59,999
- o $60,000–$74,999
- o $75,000–$99,999
- o $100,000–$124,999
- o $125,000–$149,999
- o $150,000–$199,999
- o $200,000–$249,999
- o $250,000 or more
- o 99 Prefer not to answer

Previous Next

If prefers not to answer narrower income levels

Would you be willing to tell us more generally about your household's 2015 income?

We ask this question to help understand how closely the people who participate in this study represent the region's population as a whole. It also helps the regional governments understand how residents are impacted by different transportation projects, policies, and costs.

Please see our privacy policy for more information about how we protect your privacy.

- o Under $30,000
- o $30,000–$59,999
- o $60,000–$99,999
- o $100,000–$149,999
- o $150,000 or more
- o 99 Prefer not to answer

Previous Next

If participant is in the military study, skip all Mexico-border questions

If hhsize = 1 **How many times have you traveled from the USA into Mexico in the past 30 days?** Note: Please only count trips from the USA to Mexico.
If hhsize = 2+ **How many times has anyone in your household traveled from the USA into Mexico in the past 30 days?** Note: Please count the number of border crossings from the USA to Mexico (regardless of how many people in your household were on the trip).

We ask this question to help understand how frequently residents of the San Diego region need to cross the border. Your answers are kept strictly confidential and will be grouped with answers from other participating households.

- o 0 times (have not traveled from USA to Mexico in past 30 days)
- o 1 time
- o 2 times
- o 3 times
- o 4 times
- o 5 times
- o 6 times
- o 7 times
- o 8 times
- o 9 times
- o 10 or more times traveled from USA to Mexico in past 30 days
- o 98 Don't know

Previous Next

If 1-4 border crossings in last 30 days: **Please tell us a little about each trip from the USA to Mexico in the last 30 days.**

If 5 or more border crossings in last 30 days: **Please tell us about your four most recent trips from the USA to Mexico in the last 30 days.**

Most Recent Trip to Mexico (Trip #1):

Method of travel into Mexico? Select…

[don't show if traveled by air or other] Point of entry into Mexico? Select…

Primary reason for travel to Mexico? Select…

How long was the stay in Mexico? Select…

Number of people traveling to Mexico (including yourself)? Select…

Most Recent Trip to Mexico (Trip #2):

❑ Same as Above

Method of travel into Mexico? Select…

[don't show if traveled by air or other] Point of entry into Mexico? Select…

Primary reason for travel to Mexico? Select…

How long was the stay in Mexico? Select…

Number of people traveling to Mexico (including yourself)? Select…

Previous Next

Border Crossing answer options

border_mode

- o My own vehicle (or motorcycle)
- o Other vehicle (e.g., rental, carshare, taxi, work car, friend's)
- o Bus/shuttle
- o Walking (or biking)
- o Airplane (or helicopter)
- o 97 Other way of traveling

border_poe

- o Otay Mesa (SR-905) Port of Entry
- o San Ysidro (I-5/I-805) Port of Entry
- o Tecate (SR 188) Port of Entry
- o Cross-border Terminal, Tijuana Intl Airport (pedestrian only)
- o 97 Other

border_purpose

- o Drop-off/pick-up someone (e.g. at Tijuana Intl Airport)
- o Social (visit friends/family)
- o Leisure/recreation/vacation
- o Work/business-related
- o Personal business (e.g. medical appointment)
- o 97 Other

border_duration

- o Less than 1 day
- o 1–2 days
- o 3–5 days
- o 6–10 days
- o More than 10 days

border_party

- o 1 (I traveled alone)
- o 2 persons total
- o 3 persons total
- o 4 persons total
- o 5 or more persons total (including me)

Military study and AT study participants will skip all smartphone questions:

Thank you for your answers so far. You are almost done with Part 1 of the study.

Does each adult in your household use a smartphone?

Note: Do not count tablets, such as an iPad. Only count smartphones. We use this information to provide you with the correct materials to participate in Part 2 of the study.

[if HH has 1+ children age 16-17] Part 2 of the study will also ask you to report any trips made by the children in your household. If any children age 16-17 have their own smartphone, you may choose to allow them to participate in the smartphone portion of the study, instead of reporting their travel activity on their behalf.

<HH member 1 Name>: *Repeat sequence for each member in the household age 16+*

[age 16+] Has a smartphone?	Select… ▼
Did you obtain this smartphone in the last four years?	Select… ▼
[if NEWER Android / iPhone AND age 16-17] Is child allowed to participate in smartphone portion of study?	Select… ▼

rMove is typically only compatible with NEWER Android (< 4 years) or iPhone (4s or newer). A person is categorized as a "smartphone-owning" participant if they 1) have an Android or iPhone and 2) their smartphone was bought in the last 4 years.

Previous Next

Member smartphone answer options

Note: Values are there for reference only, and do not need to be displayed.

smartphone_type:

1. Yes, has an Android phone
2. Yes, has an iPhone
3. Yes, has a Windows Phone
4. Yes, has a Blackberry
5. Yes, has other type of smartphone
6. No, does not have a smartphone

child_smartphone

1. Yes
2. No

smartphone_age

1. Yes
2. No

Skip if in the military study and did not provide an email address (i.e., opted out of the raffle)

Is your household willing to participate in future regional transportation surveys (like this one) that are conducted by the San Diego Association of Governments?

SANDAG plans to conduct additional transportation surveys in the future. If you say “yes,” you may be contacted at a later date regarding participation in one of these future surveys.

- o Yes
- o No

Previous Next

If in AT Study:

Congratulations, your household has completed the study!

Thank you very much for your participation in this important research.

*<show to all>*You may now close your browser.

SAN DIEGO REGIONAL TRANSPORTATION STUDY

RMOVE SURVEY

RSG
the science of insigh

6.1.2017

55 Railroad Row
White River Junction, VT 05001
802.295.4999
www.rsginc.com

1.0 RMOVE TRIP SURVEY QUESTIONNAIRE

TRIP SURVEY: **Error**

1. [*error*] **Which of the following best describes this trip (as shown to you here)?**
    1. The trip is shown correctly
    2. I made other stops enroute (that rMove doesn't show)
    3. I was not actually moving (rMove made a mistake)
    4. I was still traveling (had not yet stopped)
    5. Other (e.g., incorrect times, route, etc.)

TRIP SURVEY: **Purpose**

2. [*purpose*] **Why did you stop here (at destination shown on map)?**
    1. Went home
    2. [*Show if employed*] Went to work/work-related
    3. Dine out/get coffee or take-out
    4. Appointment/shopping/errands
    5. Social/leisure/vacation activity
    6. Exercise (e.g., gym, jog, bike, walk dog)
    7. Attended school/class
    8. Drop off/pick up/accompany person
    9. Change/transfer mode (e.g., wait for bus, change planes)
    10. Other reason [*Opens free-response textbox*]

3. [*purp_work*] [*show if purpose = work*] **What work was here (at destination)?**
    1. Primary workplace
    2. Work-related activity (e.g., meeting, delivery)
    3. Traveling for work (e.g., going to airport)
    4. Volunteering
    5. Other work-related [*Opens free-response textbox*]

4. [*purp_errand*] [*show if purpose = appointment/shopping/errands*] **What shopping/errands/appointments were here (at destination)?**
    1. Grocery shopping
    2. Get gas
    3. Other routine shopping (e.g., corner store, clothing)
    4. Shopping for major item (e.g., furniture, car)
    5. Medical visit (e.g., doctor, dentist)
    6. Errand without appointment (e.g., post office, dry cleaning)
    7. Errand with appointment (e.g., haircut, accountant)

6. Other [*Opens free-response textbox*]

5. [*purp_school*] [*show if purpose = school/class*] **What school was here (at destination)?**
    1. K-12 school
    2. College/university
    3. Vocational education
    4. Other education [*Opens free-response textbox*]

6. [*purp_drop*] [*show if purpose = pickup/dropoff*] **What was the pick-up/drop-off?**
    1. Pick-up someone
    2. Drop someone off
    3. Accompany someone (e.g., go along for a ride)
    4. Several of the above (e.g., both pick-up AND drop-off)

7. [*purp_leisure*] [*show if purpose = social/leisure*] **What social/leisure/vacation activity was here (at destination)?**
    1. Social (e.g., visit friends/relatives)
    2. Family activity (e.g., watch child's game)
    3. Leisure/entertain/culture (e.g., cinema, museum)
    4. Religious/civic/volunteer activity
    5. Vacation/traveling
    6. Other [*Opens free-response textbox*]

8. [*purp_other*] [*show if purpose = other*] **Can you tell us more?**
    1. [*Free-response textbox*]

TRIP SURVEY: **Travel Party**

1. [*hh_members*] [*show if HH size > 1*] **Which household members traveled with you on this trip? Select all that apply.**
    1. Just me
    2. [*HHmember1*]
    3. [*HHmember2*]
    4. …

2. [*others*] **How many other people (not in your household) were traveling specifically with you?**
    1. 0
    2. 1
    3. 2
    4. 3
    5. 4
    6. 5+

TRIP SURVEY: **Mode, Park, Cost/Fare**

1. [*mode*] **How did you travel? Select all that apply.**
    1. In a household vehicle (or motorcycle, moped)
    2. In other personal vehicle (e.g., rental, carshare, work car)
    3. Any taxi (regular or Uber/Lyft)
    4. Any bus or vanpool (e.g., public, school, shuttle)
    5. Any rail (e.g., train, subway, trolley)
    6. Bicycle
    7. Other

2. [*mode_HHauto*] [*show if mode = HH vehicle*] **What vehicle did you use?**
    1. [*List of reported HH vehicles*]
    2. Other vehicle in household
    3. Other motorcycle/moped/scooter

3. [*mode_othauto*] [*show if mode = other vehicle*] **What vehicle did you use?**
    1. Car from work
    2. Rental car
    3. Friend/colleague's car
    4. Carshare (e.g., Car2Go, Zipcar)
    5. Other vehicle

4. [*driver*] [*show if mode = HH vehicle and travel party > 1*] **Were you the driver or passenger?**
    1. Driver
    2. Passenger
    3. Both (switched drivers during trip)

5. [*park_loc*] [*show if mode = HH vehicle OR other vehicle*] **Where did you park?**
    1. [*Show if purpose = went home*] My own driveway/garage
    2. Parking lot / garage
    3. On street parking
    4. Someone else's driveway
    5. Park & ride lot
    6. Didn't park (e.g., waited, drop-off, drive-thru)
    7. Other

6. [*park_egress*] [*show if park_loc = lot/garage OR on-street*] **How many minutes to walk from the parking spot to destination?**
    1. [*Numeric entry textbox for mins*]
    2. Don't know

7. [*park_type*] [*show if park_loc = lot/garage OR on-street*] **What type of parking was it?**
    1. Free parking (no cost at all)
    2. Used a parking pass (any type)
    3. Paid via cash, credit card, or ticket(s)
    4. Reserved parking service (e.g., ParkingPanda)
    5. Other

8. [*park_cost*] [*show if park_type = cash/ticket OR parking service*] **What was the parking cost (to you)?**
    1. [*Numeric entry textbox for cost*]
    2. Don't know
    3. Another person with me paid or I was reimbursed

9. [*mode_taxi*] [*show if mode = taxi*] **What type of taxi did you use?**
    1. Regular taxi or hired car service
    2. Ride-share taxi (e.g., Uber, Lyft)

10. [*taxi_type*] [*show if mode = taxi*] **Who paid the taxi fare?**
    1. I paid the fare myself (no reimbursement)
    2. [*Show if employed*] Employer paid (I am reimbursed)
    3. [*Show if travel party > 1*] Split/shared fare with other(s)
    4. [*Show if travel party > 1*] Someone else paid 100% (all of taxi fare)
    5. Other

11. [*taxi_cost*] [*show if taxi_type = I paid OR employer paid OR split/shared*] **What total did the taxi driver receive?**
    1. [*Numeric entry textbox for cost*]
    2. Don't know

12. [*mode_bus*] [*show if mode = bus*] **What bus did you use?**
    1. Public bus
    2. Express bus/Rapid
    3. University shuttle/bus
    4. [*Show if student*] School bus
    5. Intercity bus (e.g., Greyhound)
    6. Shuttle (e.g., a hotel's, an airport's)
    7. Vanpool
    8. Paratransit
    9. Other bus

13. [*bus_type*] [*show if mode_bus = public OR express OR intercity*] **How did you pay the bus fare?**
    1. Free (no cost at all)
    2. Used pass (any type)
    3. Cash, credit card, or ticket(s)
    4. Don't know
    5. Other

14. [*bus_cost*] [*show if bus_type = cash/ticket*] **What did the bus fare cost (to you)?**
    1. [*Numeric entry textbox for cost*]
    2. Don't know

15. [*mode_rail*] [*show if mode = rail*] **What train/rail did you use?**
    1. Local rail/light rail (e.g., Trolly, Sprinter)
    2. COASTER
    3. Intercity rail (e.g., Amtrak, Metrolink)
    4. Subway
    5. Other rail

16. [*rail_type*] [*show if mode = rail*] **How did you pay the rail fare?**
    1. Free (no cost at all)
    2. Used pass (any type)
    3. Cash, credit card, or ticket(s)
    4. Don't know
    5. Other

17. [*rail_cost*] [*show if rail_type = cash/ticket*] **What did the rail fare cost (to you)?**
    1. [*Numeric entry textbox for cost*]
    2. Don't know

18. [*mode_bike*] [*show if mode = bicycle*] **What bicycle did you use?**
    1. Bicycle owned by my household
    2. Borrowed bicycle (e.g., from a friend)
    3. Rental or bike-share bicycle

19. [*mode_other*] [*show if mode = other*] **How did you travel?**
    1. Airplane/helicopter
    2. Boat/ferry/water taxi
    3. Skateboard/hoverboard
    4. Golf cart
    5. ATV or snowmobile
    6. Other

20. [*air_type*] [*show if mode_other = airplane*] **Who paid for the airplane ticket?**
    1. I paid the airfare cost myself (no reimbursement)
    2. [*Show if employed*] Employer paid 100% (I am reimbursed)
    3. Used miles/points to purchase flight
    4. Someone else paid 100% (all of airfare cost)
    5. Other

21. [*air_cost*] [*show if air_type = I paid OR employer paid*] **How much did the total airfare cost?**
    1. [*Numeric entry textbox for cost*]
    2. Don't know

22. [*ferry_type*] [*show if mode_other = ferry*] **How did you pay the ferry/boat fare?**
    1. Free (no cost at all)
    2. Used pass (any type)
    3. Cash, credit card, or ticket(s)
    4. Don't know
    5. Other

23. [*ferry_cost*] [*show if ferry_type = cash/ticket*] **How much did the ferry/boat cost (to you)?**
    1. [*Numeric entry textbox for cost*]
    2. Don't know

2.0 RMOVE DAILY SURVEY QUESTIONNAIRE

1. [*ynotrips*] [*show if made zero trips*] **What didn't you go anywhere on <date>? Select all that apply.**
    1. I did go somewhere but rMove didn't capture the trip(s)
    2. *[Show if employed]* Not scheduled to work/took day off
    3. *[Show if employed]* Worked at home for pay (e.g., telecommute)
    4. *Worked around home (not for pay)*
    5. Kids were on school vacation/break
    6. Kids were home-schooled
    7. No available transportation (e.g., no car, can't get to bus)
    8. Was sick or caring for another person
    9. Was waiting for visitor/delivery (e.g., cable installation)
    10. Other reason

2. [*toll*] [*show if traveled/made trips*] **On <date>, did you use a toll road and/or express lane on any of your trips? Select all that apply.**
    1. No
    2. Yes, used a toll road that does NOT have express lanes (e.g., SR 125)
    3. Yes, traveled in the express lane on a toll road (e.g., I-15)

3. [*teletime*] [*show if employed*] **How much did you work at home/telecommute for pay on <date>? Please estimate for all time worked at home (both during & outside regular business hours)**
    1. [*Sliding selector, 15 minute increments, 0 – 10+ hours*]

4. [*shoptime*] **How much did you shop online on <date>? Please estimate for all time shopping online (whether you made a purchase or not).**
    1. [*Sliding selector, 15 minute increments, 0 – 10+ hours*]

5. [*delivery*] **On <date>, which of the following occurred at your home? Select all that apply.**
    1. Mailed packages (e.g., FedEx, UPS, Post Office) were delivered
    2. Food (e.g., pizza, Chinese food) was delivered
    3. Someone came to do work (e.g., landscaping, cable service, housecleaning, etc.)
    4. None of the above

6. [*end*] [*show if ynotrips = I did go somewhere*] **You said rMove missed at least one trip on <date>. Please go back to the lower right corner of the main screen and click on "add trip" to add your trip(s) that rMove missed. Click "next" to finish this survey.**

   [*show if respondent made trips*] **Thanks for telling us about your trips on <date>. If you made trips that rMove missed, please go back to the lower right corner of the main screen and click on "add trip" to add trip(s). Please click "next" to finish this survey.**

If Hhsize >= 2: Show to everyone who is age 18 or older

(Assume proxy=3 for children, assume proxy=1 when hhsize=1)

To better understand how households are completing the study, we would like to know if someone other than <NAME> is filling out this portion of the survey.

Are you <NAME> or are you filling out this survey on <NAME's> behalf?

- o I am <Name> and I am answering this survey
- o I am answering this survey for <Name> and <Name> *IS* here with me to provide answers
- o I am answering this survey for <Name> and <Name> is *NOT* here with me to provide answers

Where was <Name> at 3 a.m. on <travel date> (when the travel day BEGAN)?

If traveling between places (in a car, on a bus/plane, etc.), please provide the last place stopped BEFORE 3 a.m. (even if it was a short stop such as to get gas).

- o Home
- o *<Show if employed full/part/volunteer>* Work (Primary)
- o *<Show if has a second job>* Work (Second Job)
- o Another place, please specify: e.g., at friend's house

Where was <Name> at 3 a.m. on <travel date + 1 day> (when the travel day ENDED)?

If traveling between places (in a car, on a bus/plane, etc.), please answer with the first place stopped AFTER 3 a.m. (even if it was a short stop such as to get gas).

- o Home
- o *<Show if employed full/part/volunteer>* Work (Primary)
- o *<Show if has a second job>* Work (Second Job)
- o Another place, please specify: e.g., at friend's house

Previous Next

For Group 3: This question is asked only if the respondent started and ended their assigned travel date at the same location (e.g., home).

<Name>'s day began at <startloc> and ended at <endloc>.

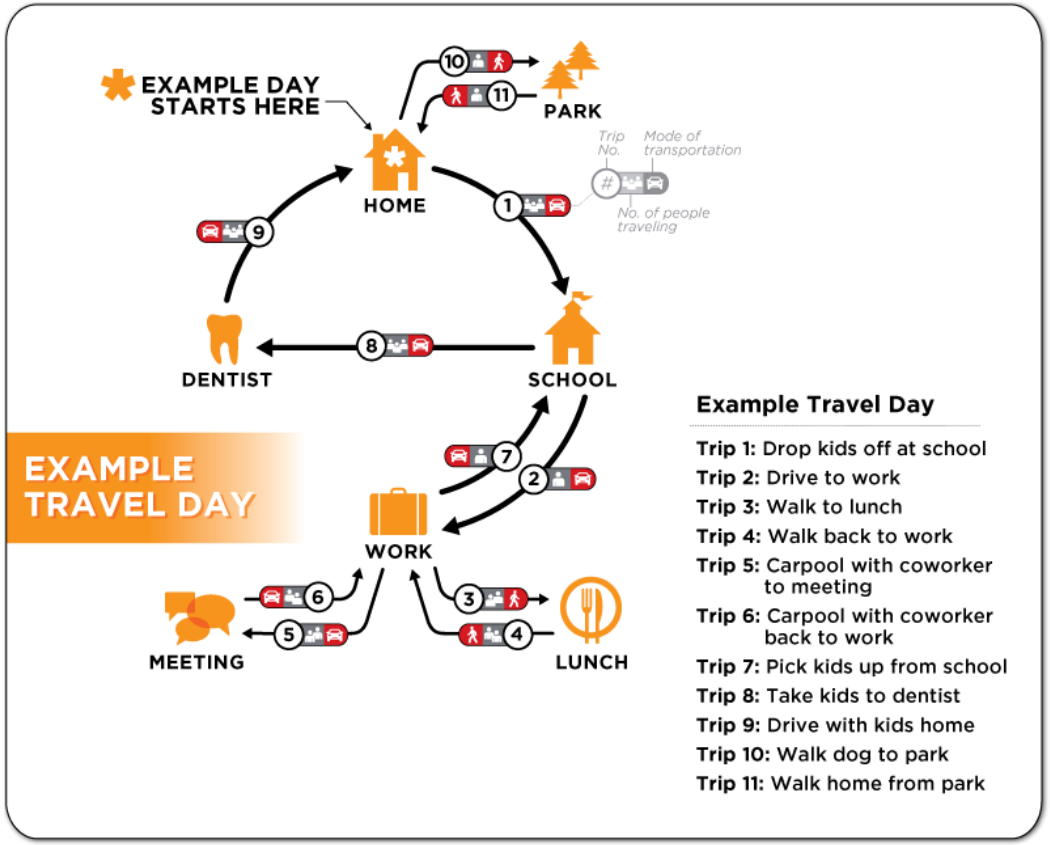
Did <Name> go anywhere on <travel date>, even if it was just a short trip such as a walk or bike ride?

- Yes
- No

What is a trip?
A **trip** is anytime you travel at least 100 feet and stop at a new location. <if Military Study> Note: Please only report trips that take place at least partially outside of your military installation.

What are some example trips?
- Drive to work
- Ride the bus to a store
- Drop a child off at school
- Walk to a park
- Stop at an ATM

What If I go out, but don't make a stop?
Please report this as 2 trips (see example). Use the most distant place from where you began as your "destination."



Previous Next

Note: This screen is only shown if the respondent started and ended their assigned travel date in different places (b/c we know they traveled over the course of the day)/

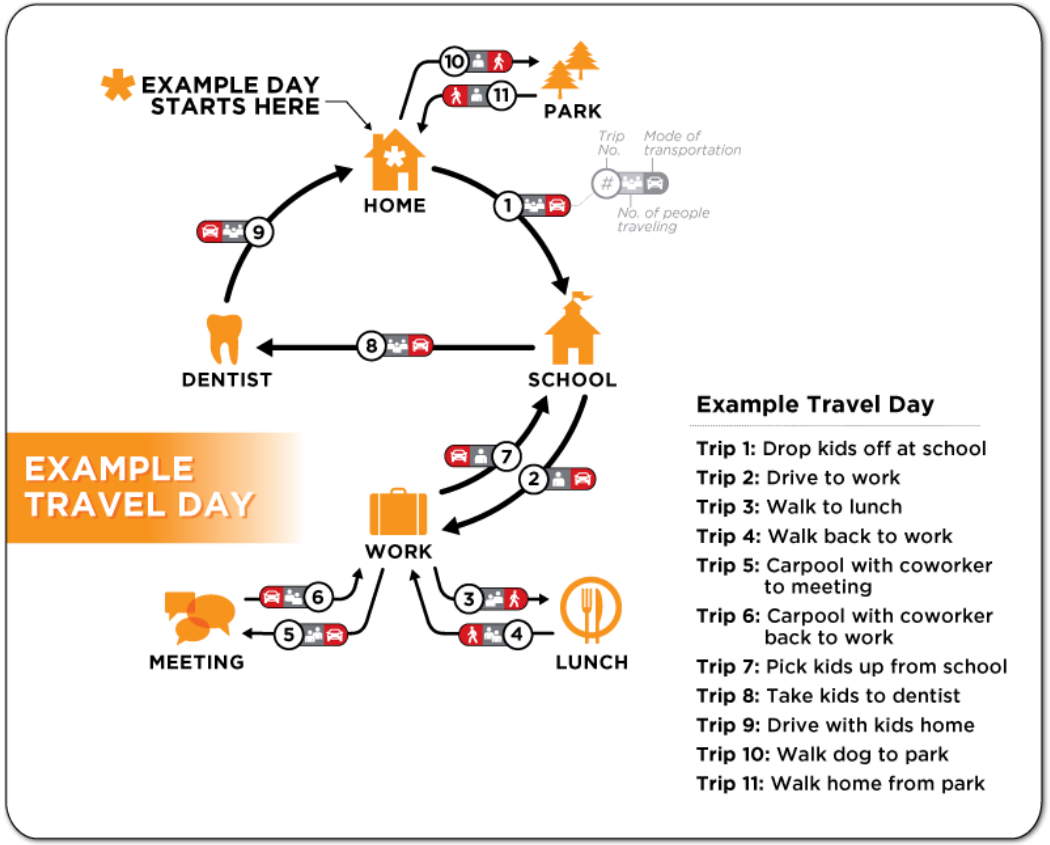
Thank you. Now, we will ask for details of the trips <Name> made on <travel date>.

Please review the definition of a "trip" below, then click "Next" to continue.

What is a trip?
A **trip** is anytime you travel at least 100 feet and stop at a new location. <if Military Study> Note: Please only report trips that take place at least partially outside of your military installation.

What are some example trips?
- Drive to work
- Ride the bus to a store
- Drop a child off at school
- Walk to a park
- Stop at an ATM

What If I go out, but don't make a stop?
Please report this as 2 trips (see example). Use the most distant place from where you began as your "destination."



Previous Next

If the respondent did not make any trips on their assigned travel date

Why didn't <Name> go anywhere or make any trips on <travel date>?

- o 2 *[show if employed]* Not scheduled to work/took day off
- o 3 *[show if employed]* Worked at home for pay (e.g., telework)
- o 4 Worked around home (not for pay)
- o 5 Kids were on school vacation/break
- o 9 Kids were home-schooled
- o 6 No available transportation (e.g., no car, can't get to bus)
- o 7 Was sick or caring for another person
- o 8 Was waiting for visitor/delivery (e.g., cable installation)
- o 10 *[show if military study]* I stayed on base all day
- o 97 Other reason, please specify: _____

Previous Next

Prepopulate text boxes and geocoder with previously typed locations and these locations geocoded in recruit survey: Home, Second Home, Primary Work, School

Please list, in order, all the places <Name> went between 3:00 a.m. on <travel date> and 3:00 a.m. on <travel date +1>. *If military study:* **Note: Please only report trips where all or part of the trip took place outside of your military installation.**

Please give a short name to each unique/different place. When all places are listed, click “Next” to continue.

Click and drag a place to re-order the list. Click the ⊕ icon next to a place to add a new one below. Click the ⊖ icon to remove a place.

<Name> started the day at:	<loc_start>
Then went to:	<place 1>
Then went to:	<place 2> ⊕
Then went to:	Enter a name for this place ⊖ ⊕
<Name> ended the day at:	<loc_end>

Example Travel Day	
Started day at:	Home
Then went to:	Elementary School
Then went to:	Work
Then went to:	Chase Bank
Then went to:	Work
Then went to:	Panera Bread
Then went to:	Work
Then went to:	Elementary School
Then went to:	Dentist
Then went to:	Home
Then went to:	Park
Ended day at:	Home

Previous Next

Listed to the right are all the places <Name> reported going on <travel date>.

Are there any places missing from <Name>'s travel on <travel date>?

Please select all that apply.

<Name>'s Travel Day	
Started day at:	<3AM start loc>
Then went to:	<first location>
Then went to:	<second location>
Then went to:	Etc.
Ended day at:	<3AM end loc>

- ❑ Yes, went out but didn't stop anywhere (e.g., jog/bike ride, walked dog, etc.) *<pop-up example graphic on blue text – see next slide>*
- ❑ Yes, made a short trip during other activities (e.g., quick trip for lunch)
- ❑ Yes, stopped briefly on the way to somewhere else (e.g., gas station, drive-thru)
- ❑ Yes, dropped somebody off while heading somewhere else (e.g., drop child at friend's house)
- ❑ Yes, walked to/from transit stop or parking garage that was 2 or more blocks away
- ❑ Yes, forgot to include another type of trip
- ❑ All of <Name>'s trips on <travel date> are listed

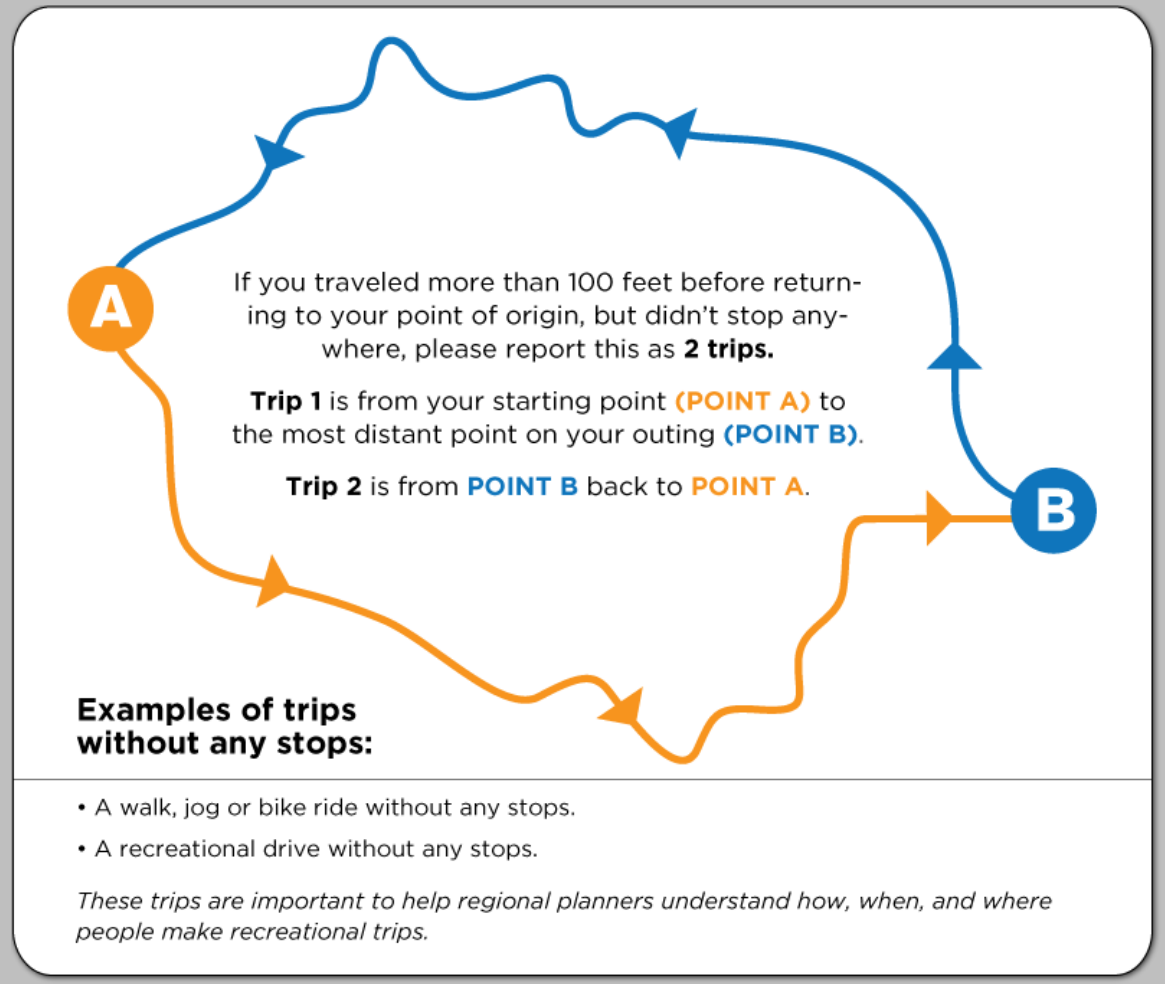
It is important to report all trips, including short stops. Some trips (e.g., walks, bike rides, or short stops on the way somewhere else) are easy to forget!

If the respondent selected any "Yes" answers, branch back to locs; the 2nd time they see this page, the "No" box will automatically be checked but their original answers will be saved in the DB

Previous Next

Pop-Up Instructions from Previous Slide

How do I record a trip if I didn't stop anywhere (e.g., walk the dog or go for a run)?



Previous Next

If respondent added trips on previous page, they return to the roster to add them.

Please list, in order, all the places <Name> went between 3:00 a.m. on <travel date> and 3:00 a.m. on <travel date +1>.

Please give a short name to each unique/different place. When all places are listed, click “Next” to continue.

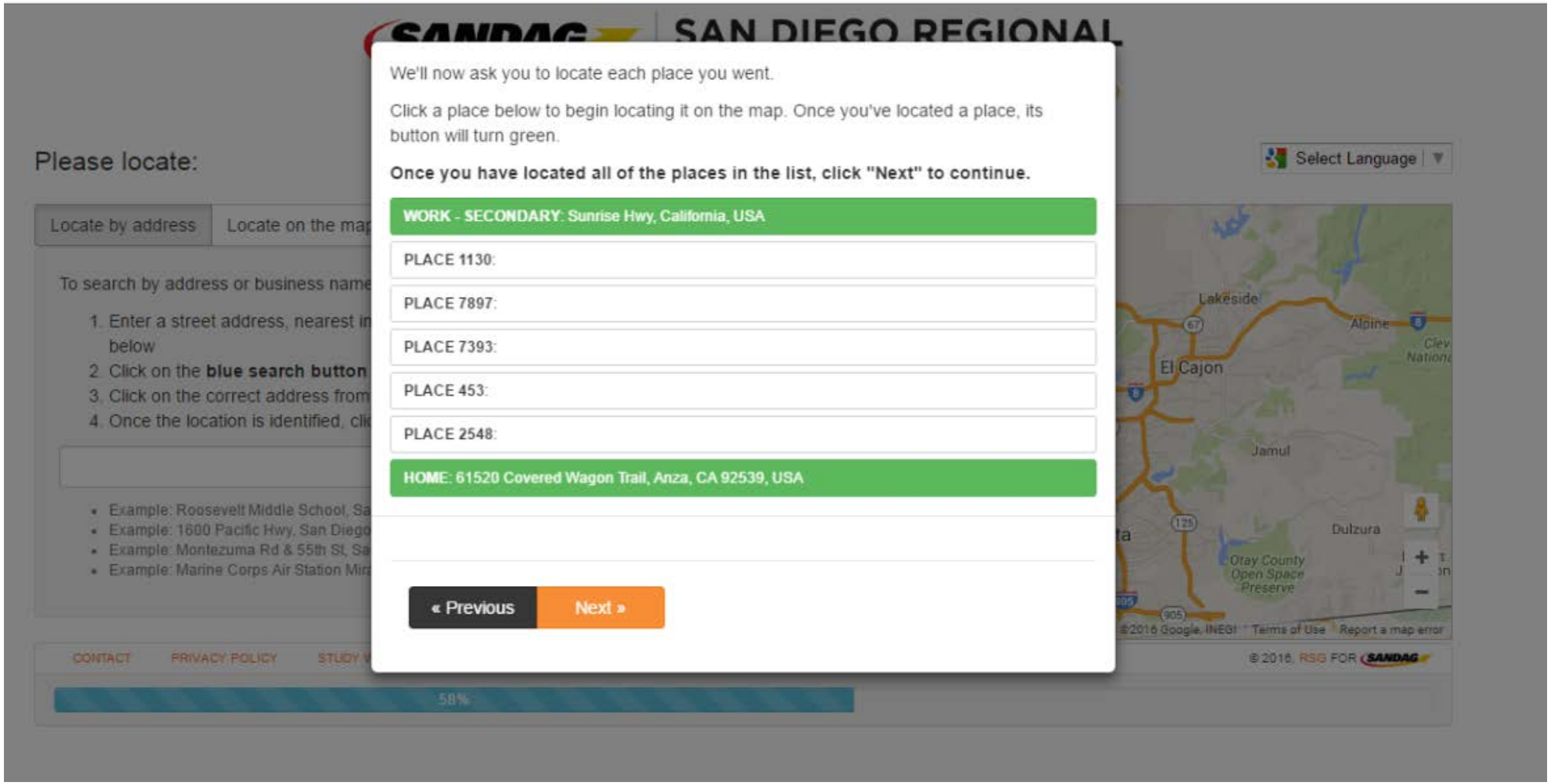
Please insert any places you want to add. Remember you can drag the places to reorder the list.

Click and drag a place to re-order the list. Click the ⊕ icon next to a place to add a new one below. Click the ⊖ icon to remove a place.

<Name> started the day at:	<loc_start>	
Then went to:	<place 1>	
Then went to:	<place 2>	⊕
Then went to:	Enter a name for this place	⊖ ⊕
<Name> ended the day at:	<loc_end>	

Example Travel Day	
Started day at:	Home
Then went to:	Wiley Elementary
Then went to:	Work
Then went to:	Chase Bank
Then went to:	Work
Then went to:	Panera Bread
Then went to:	Work
Then went to:	Wiley Elementary
Then went to:	Dentist
Then went to:	Home
Then went to:	Park
Ended day at:	Home

Previous Next

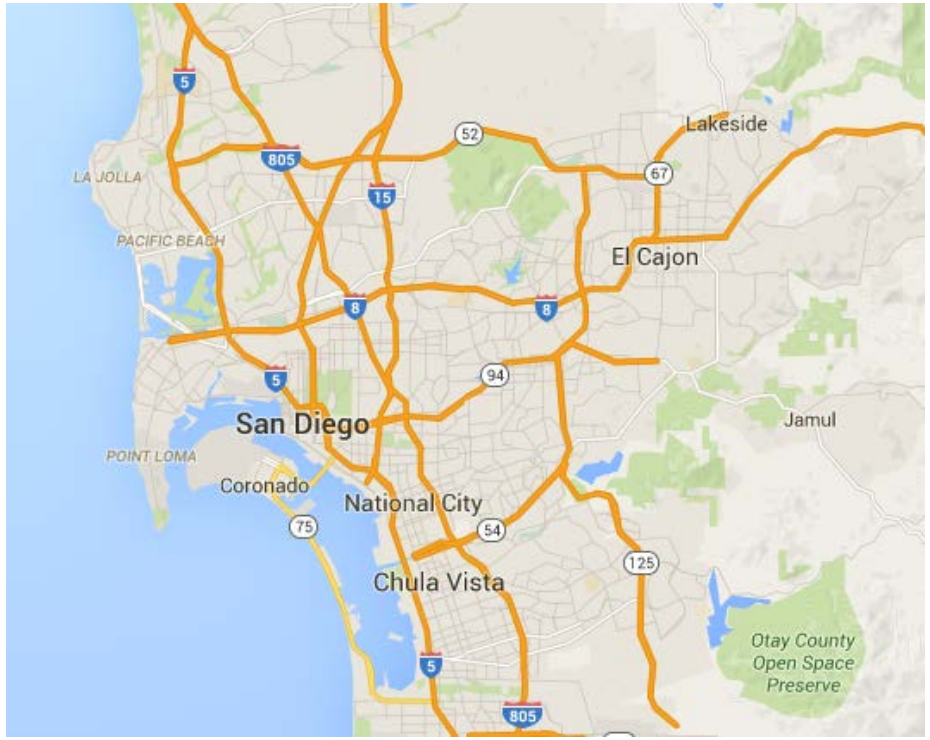

SAN DIEGO REGIONAL
Please locate:
Select Language
Locate by address
Locate on the map
To search by address or business name
1. Enter a street address, nearest in
below
2. Click on the blue search button
3. Click on the correct address from
4. Once the location is identified, cli
Example: Roosevelt Middle School, Sa
Example: 1600 Pacific Hwy, San Diego
Example: Montezuma Rd & 55th St, Sa
Example: Marine Corps Air Station Mir
CONTACT
PRIVACY POLICY
STUDY
58%
We'll now ask you to locate each place you went.
Click a place below to begin locating it on the map. Once you've located a place, its button will turn green.
Once you have located all of the places in the list, click "Next" to continue.
WORK - SECONDARY: Sunrise Hwy, California, USA
PLACE 1130:
PLACE 7897:
PLACE 7393:
PLACE 453:
PLACE 2548:
HOME: 61520 Covered Wagon Trail, Anza, CA 92539, USA
« Previous
Next »
Lakeside
Alpine
El Cajon
Jamul
Dulzura
Otay County Open Space Preserve
© 2016 Google, INEGI
Terms of Use
Report a map error
© 2016, RSG FOR SANDAG

Locations not provided in the Recruit Survey are geocoded here.
Cycle through locations in sequential order from the roster.

Please locate: **<place name>**

<if military study> Note: If you are reporting locations on a military installation, please only report the gate or point of entry/exit you used for your travel. You do not need to identify your starting location within a military installation.

Locate by address | Locate on the map



<if locate by address>

To search by address or business name:

1. Enter a street address, intersection, or business name in the box below
2. Click on the correct address from the list of search results that appear
3. Click “Next” to continue

- Example: 1600 Pacific Hwy, San Diego, CA 92101
- Example: Montezuma Rd & 55th St, San Diego, CA 92115
- Example: Marine Corps Air Station Miramar, San Diego, CA

<if locate by map>

Map instructions

1. Click on the map to zoom in.
2. When zoomed in close enough, clicking the map will place a ‘marker.’
3. Continue clicking until you confirm the correct location.

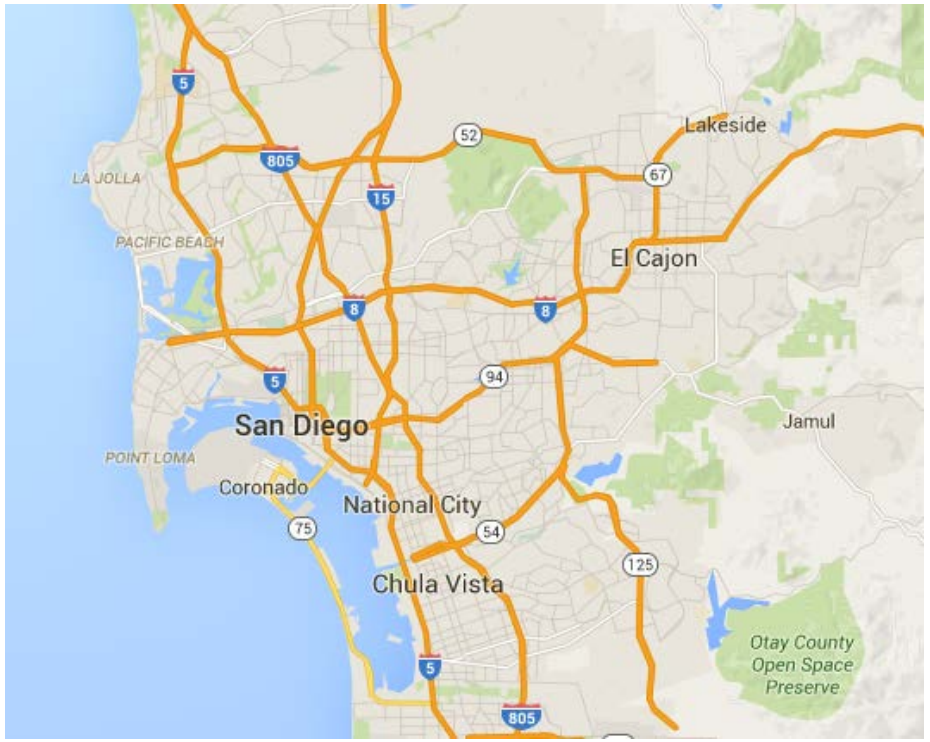
Previous **Next**

<if not military study> **The list below should include all the trips <Name> made on <travel date>.**

<if military study> **The list below should include all the trips <Name> made at least partially outside of a military installation on <travel date>.**

If you need to add or remove trips, please click "Previous" to go back and edit your places.
If all trips from <day of week><travel date> are correct, please click "Next" to continue.

Trip #	Start	End	Approx. Distance
1	<3am start loc>	<first location>	
2	<first location>	<second location>	
3	<second location>	Etc.	
4	Etc.	<3am end loc>	



If Google returns trip distances, show Appx distance. If Google fails to return driving distances due to flight or ferry trip , hide that column

Previous Next

[ask trip details questions for each trip]

Please tell us about <Name>'s trip from <place x> to <place y>.

Viewing trip <x> of <n> total trip(s).

<Name>'s Travel Day
Trip #1: <3am start loc> to <place 2>
Trip #2: <place 2> to <place 3>
Trip #3: <Etc.>
Trip #n: <last location> to <3am end loc>

Time departed from <place x> Select… ▼

Time arrived at <place y> Select… ▼

If hhsize > 1: Who specifically traveled with <Name> on this trip? (Select all that apply.):

- ☐ Just <Name> (traveled alone)
- ☐ <Member 1>
- ☐ …
- ☐ <Member z>
- ☐ Additional people (not listed here)

If traveled with additional people OR Hhsize =1:
How many other people traveled with <Name> on this trip? Select… ▼

[More questions on following slide -- ask all of the trip-details questions on same page in the survey, but in this document they are provided on the separate slides for space reasons.]

Previous Next

Please tell us about <Name>'s trip from <place x> to <place y>.

Viewing trip <x> of <n> total trip(s).

<Name>'s Travel Day
Trip #1: <3am start loc> to <place 2>
Trip #2: <place 2> to <place 3>
Trip #3: <Etc.>
Trip #n: <last location> to <3am end loc>

Why did you stop at <place y>? Select… ▼

[If purpose = work/work-related:] What work was here? Select… ▼

[If purpose = school/class:] What school was here? Select… ▼

[If purpose = appointment/shopping/errands:] What shopping/errands/ appointments were here? Select… ▼

[If purpose = pickup/dropoff:] What was the pick-up/drop-off? Select… ▼

[If purpose = "leisure":] What social/leisure/vacation activity was here? Select… ▼

[If "other" purpose chosen at any level] Can you tell us more? Text box

How did you travel? Select… ▼

[More questions on following slide -- ask all of the trip-details questions on same page in the survey, but in this document they are provided on the separate slides for space reasons.]

Previous Next

List of Answer Options: Trip Detail Questions: ALL TRIPS

Answer choices on this page all match to rMove

[departure_time] *5 minute increments, one drop-down*
Range from "Before 3:00 a.m." to "2:55 a.m. (next day)
Never show "3:00 a.m. or later (next day)" for trip start time

Trip start must be the same as or later than the end time of the previous trip

[arrival_time] *5 minute increments, one drop-down*
For non-GPS:
Range from "before 3 a.m." to "3 a.m. or later (next day)
Never show "Before 3 a.m." for trip end time; never show "3 am or later" for trip start time

Trip end time must be later than trip start time

[hhmember1– hhmember(max)]:
All HH members are listed.

[others]
- *[only show if HHsize=1]* 0 (I traveled alone)
- 1 other person
- 2 other people
- 3 other people
- 4 other people
- 5+ other people

[purpose]
- Went home
- *[show if employed]* Went to work/work-related
- Dine out/get coffee or take-out
- Appointment/shopping/errands
- Social/leisure/vacation activity
- Exercise (e.g., gym, jog, bike, walk dog)
- Attended school/class
- Drop-off/pick-up/accompany person
- Change/transfer mode (e.g., wait for bus, change planes)
- Other reason *[ask follow-up open-end on other]*

[purp_work]
- Primary workplace
- Work-related activity (e.g., meeting, delivery)
- Traveling for work (e.g., going to airport)
- Volunteering
- Other work-related *[ask follow-up open-end on other]*

[purp_school]
- K-12 school
- College/university
- Vocational education
- Other education-related (e.g., field trip) *[ask follow-up open-end on other]*

[mode]
- In a household vehicle (or motorcycle, moped)
- In other personal vehicle (e.g., rental, carshare, work car)
- Any taxi (regular or Uber/Lyft)
- Any bus or vanpool (e.g., public bus, school bus, shuttle)
- Any train (e.g., rail, subway, trolley)
- Walk (or jog/wheelchair)
- Bicycle
- Other

[purp_errand]
- Grocery shopping
- Get gas
- Other routine shopping (e.g., convenience store, clothing)
- Shopping for major item (e.g., furniture, appliances)
- Medical visit (e.g., doctor, dentist)
- Errand without appointment (e.g., post office, dry cleaning)
- Errand with appointment (e.g., haircut, accountant)
- Other *[ask follow-up open-end on other]*

[purp_drop]
- Pick-up someone
- Drop-off someone
- Accompany someone (e.g., go along for ride)
- Several of above (e.g., both pick-up AND drop-off)

[purp_leisure]
- Social (e.g., visit friends/relatives)
- Family activity (e.g., watch child's game)
- Leisure/entertain/cultural (e.g., cinema, museum)
- Religious/civic/volunteer activity
- Vacation/traveling
- Other *[ask follow-up open-end on other]*

[purp_other]
- *Open-end text box*

Previous Next

Please tell us about <Name>'s trip from <place x> to <place y>.

Viewing trip <x> of <n> total trip(s).

<Name>'s Travel Day
Trip #1: <3am start loc> to <place 2>
Trip #2: <place 2> to <place 3>
Trip #3: <Etc.>
Trip #n: <last location> to <3am end loc>

HH or other Auto Follow-Ups/Specifics

[If mode = HH vehicle or other vehicle (list depends on whether HH or other vehicle:]
What vehicle did you use? Select…

[If mode=HH vehicle or other NON-TAXI vehicle and travel party = 2+:]
Were you the driver or passenger? Select…

[If mode=HH vehicle or other vehicle:] Where did you park? Select…

[If park_loc = lot/garage or on-street:] What type of parking was it? Select…

[If park_loc = lot/garage or on-street] How many minutes to walk from parking spot to <place y>? Select…

[If park_type = cash/ticket or parking service:] What was the parking cost (to you)? $ Numeric entry: .01 - 99.99
- ☐ Not sure/don't remember
- ☐ Another person with me paid (or I was reimbursed)

[If park_loc = park and ride:] What city was the Park & Ride lot in? Select…

[Show park and ride lots for city] What Park & Ride lot was it? Select…

[If mode = taxi:] What type of taxi was it? Select…

[If mode = taxi:] Who paid the taxi fare? Select…

[If taxi_type = I paid or employer paid or split/shard:] What total did the taxi driver receive? $ Numeric entry: .01 - 99.99
- ☐ Not sure/don't remember

[If mode=HH vehicle or other vehicle:] Did <Name> use a toll road and/or express lane on the trip? Select all that apply.
- ☐ No
- ☐ Yes, used a toll road that does NOT have express lanes (e.g., SR 125)
- ☐ Yes, traveled in the Express Lane on a toll road (e.g., I-15)

Previous Next

List of Answer Options: Trip Detail Questions: Mode details

[mode_hhauto]
- <List of HH vehicles>
- Other vehicle in household
- Other motorcycle/moped/scooter

[mode_othauto]
- Car from work
- Rental car
- Friend/colleague's car
- Carshare
- Other vehicle

[driver]
- Driver
- Passenger
- Both (switched drivers during trip)

[park_loc]
- *[show if purpose = went home]* My own driveway/garage
- Parking lot/garage
- On street parking
- Someone else's driveway
- Park & Ride lot
- Didn't park (e.g., waited, drop-off, drive-thru)
- 97 Other

[park_cost]
- *Numeric entry box for cost min 0.01 to max 99.99*
- Don't know
- Another person with me paid or I was reimbursed

Parking

[park_type]
- Free parking (no cost)
- Used a parking pass (any type)
- Paid via cash, credit card, or ticket(s)
- Reserved parking service (e.g., ParkingPanda)
- 97 Other

[park_egress]
- Less than 1 minute
- 1—5 mins
- 5—10 mins
- 10—15 mins
- 15—20 mins
- 20—25 mins
- 25—30 mins
- More than 30 mins
- 98 Don't know

[parkride_lot]
- Park and Ride lot A
- Park and Ride lot B
- Park and Ride lot C
- 97 Other
- 98 Don't know

Taxi Answers

[mode_taxi]
- Regular taxi or hired car service
- Rideshare taxi (e.g., Uber, Lyft)

[taxi_type]
- I paid the fare myself (no reimbursement)
- *[show if employed]* Employer paid (I am reimbursed)
- *[show if travel party =2+]* Split/shared fare with other(s)
- *[show if travel party =2+]* Someone else paid 100% (all of taxi fare)
- Other

[taxi_cost]
- *Numeric entry for cost min 0.01 to max 999.99*
- Don't know

Previous Next

Bicycle Follow-Ups / Specifics

[If mode = bicycle:] What bicycle did you use?

Select… ▼

Other - Air Mode Follow-Ups / Specifics

[If mode = other:] How did you travel?

Select… ▼

[If mode_other = airplane:] Who paid for the airplane ticket?

Select… ▼

[If air_type = I paid or employer paid:] How much did the total airfare cost?

List of Answer Options: Trip Detail Questions: Bike/other mode details

[mode_bike]
- Bicycle owned by my household
- Borrowed bicycle (e.g., from friend)
- Rental or bikeshare bicycle

[mode_other]
- Airplane/helicopter
- Boat/ferry/water taxi
- Skateboard/hoverboard
- Golf cart
- ATV or snowmobile
- Other

[air_type]
- I paid the airfare cost myself (no reimbursement)
- *[show if employed]* Employer paid 100% (I am reimbursed)
- Used miles/points to purchase flight
- Someone else paid 100% (all of airfare cost)
- 97 Other

[air_cost]
- *Numeric entry with 2 decimal places – min .01, max 9999.99*
- Don't know

Previous Next

Bus/Rail/Ferry/ Follow-Ups / Specifics

[If mode = bus :] What bus or vanpool did you use?

Select… ▼

[If mode = rail:] What train/rail did you use?

Select… ▼

[If mode = bus, rail, or other->boat/ferry:] How did you travel from <origin> to the stop/station?

Select… ▼

[If more = bus, rail, or other->ferry:] How did you travel from the stop/station to <destination>?

Select… ▼

[If mode_bus = public, express, or intercity:] How did you pay the bus fare?

Select… ▼

[If bus_type = cash/ticket:] What did the bus fare cost (to you)?

$ Numeric entry: .01-999.99

☐ Not sure/don't remember

[If mode = rail:] How did you pay the rail fare?

Select… ▼

[If fare = cash/ticket:] What did the rail fare cost (to you)?

$ Numeric entry: .01-999.99

☐ Not sure/don't remember

[If mode_other = ferry:] How did you pay the ferry/boat fare?

Select… ▼

[If ferry_type = cash/ticket:] What did the ferry/boat fare cost (to you)?

$ Numeric entry: .01-999.99

☐ Not sure/don't remember

List of Answer Options: Trip Detail Questions: Bus/Rail/Ferry details

[mode_bus]
- Public bus
- Express Bus/Rapid
- University shuttle/bus
- *[show if student]* School bus
- Intercity bus (e.g., Greyhound)
- Shuttle (e.g., a hotel's, an airport's)
- Vanpool
- Paratransit
- Other bus

[access]
- Walked or jogged
- Rode a bike
- Drove and parked a car
- Got dropped off
- Took a taxi
- Transferred from other transit
- Was already at the stop
- Other

[egress]
- Walked or jogged
- Rode a bike
- Drove and parked a car
- Got dropped off
- Took a taxi
- Transferred to other transit
- Was already at the stop
- Other

[mode_rail]
- Local rail/light rail (e.g., Trolley, SPRINTER)
- COASTER
- Intercity rail (e.g., Amtrak, Metrolink)
- Subway
- Other rail

[bustype, railtype, ferrytype]
- Free (no cost at all)
- Used pass (any type)
- Cash, credit card, or ticket(s)
- Don't know
- Other

[buscost, railcost, ferrycost]
- *Numeric entry for cost .01 to 999.99*
- Don't know

Note – the above fare & cost variables should write out to separate columns (ie one for bustype, one for railtype, etc.) (this is in order to match rMove write-out)

Can use same columns for access for all modes, and egress for all modes.

Previous Next

“Copy Trips” Feature

The following slides show the alternate questions that ask/allow household members to copy trips described by members who have already completed their diary

Previous Next

COPY TRIPS: First page shown after "proxy" if person was reported on a previous HH member's trips

Below is a list of trips that other household members reported making with <name>.

Please confirm the trips that you made.

Trip 1st Reported by	Start location	End location	Start time	End time	Traveled on Trip	Confirm
Mom	Home	School	7:40 AM	7:55 AM	Adult 1, Child 2	☐
Mom	School	Piano Lesson	2:55 PM	3:25 PM	Child 2	☐
Mom	Piano Lesson	Gas Station	4:35 PM	4:50 PM	Adult 1	☐
Mom	Gas Station	Home	5:00 PM	5:45 PM	Adult 1	☐
None of the above						☐

Previous Next

COPY TRIPS: Page shown if person was reported on and confirms a previous HH member's trips. If person was not reported on previous trips or chose not to confirm any of the trips, they will continue as normal from the "location start" question and enter a new roster

The "travel day" began at 3 a.m. on <assigned travel date> and ended at 3 a.m. on <assigned travel date + 1 day>.

Was the following trip the first trip <name> made on <assigned travel date>**?**

Home to School, from <time> to <time>

1. Yes
2. No

Was the following trip the last trip <name> made on <assigned travel date>**?**

Gas Station to Home, from <time> to <time>

1. Yes
2. No

If person confirms previous trips, but says they started or ended at a different location (i.e. they say "no" to one or both of the above questions), they will answer the location start and/or end questions before proceeding to the next page.

Previous Next

COPY TRIPS: Show "trips_yesno2" if person confirmed 1+ copied trips

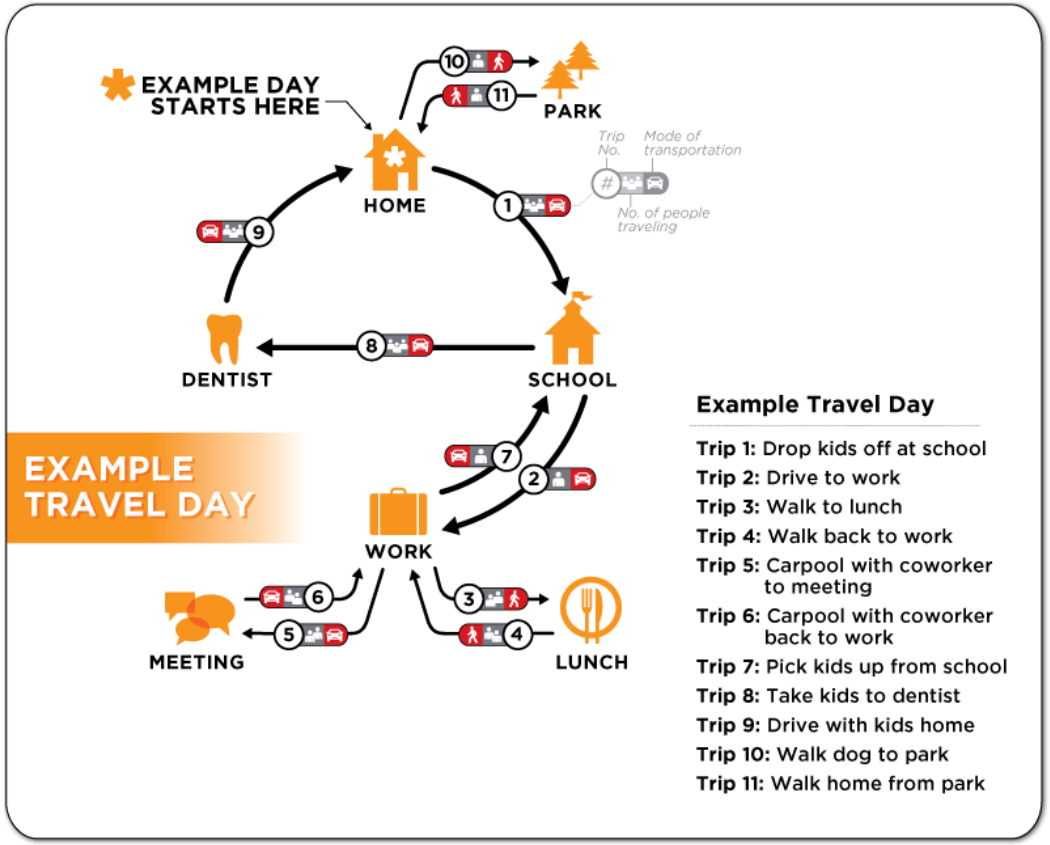
Thank you for your answers so far. Now, we'll ask you to provide **details about the trips** <Name> made on <Travel Date>.

Please review the definition of a "trip" below, then click "Next" to continue.

What is a trip?
A **trip** is anytime you travel at least 100 feet and stop at a new location.

What are some example trips?
- Drive to work
- Ride the bus to a store
- Drop a child off at school
- Walk to a park
- Stop at an ATM

What If I go out, but don't make a stop?
Please report this as 2 trips (see example). Use the most distant place from where you began as your "destination."

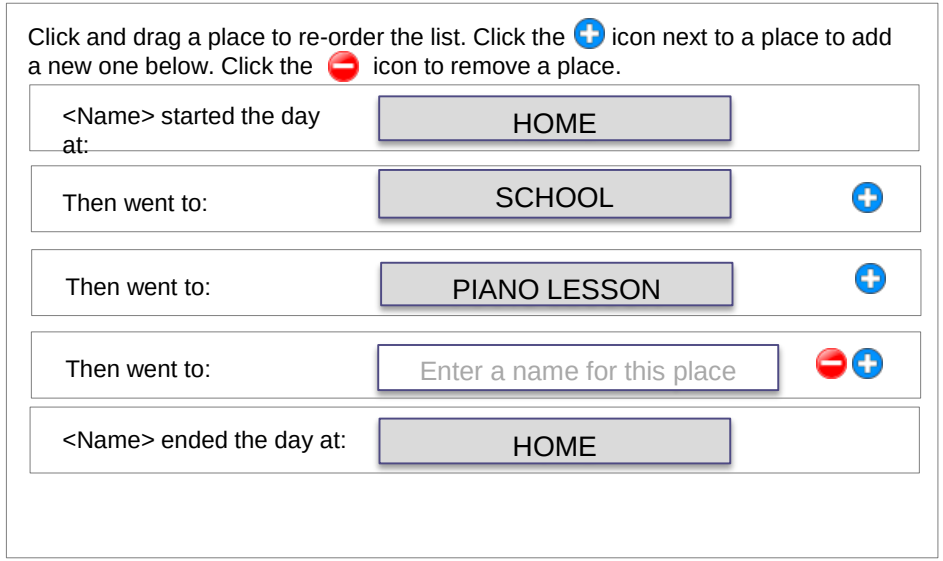


Previous Next

COPY TRIPS: Page shown after person confirms start and end location of the travel day for people who were reported on and confirmed being on previous HH members' trips.

Please list, in order, all the places <Name> went between 3AM on <assigned travel date> and 3AM on <assigned travel date +1>.

Please provide a unique name or short description for each unique/different place. When all places are listed below, click "Next" to continue.



Copied trips are shown, new trip destinations can be inserted between Multi-location geocoder will ask person to locate any NEW places, but not copied trips

Example Travel Day	
<Name> started the day at:	Home
Then went to:	Avondale Elementary
Then went to:	Work
Then went to:	Chase Bank
Then went to:	Work
Then went to:	Panera Bread
Then went to:	Work
Then went to:	Avondale Elementary
Then went to:	Dentist
Then went to:	Home
Then went to:	Park
<Name> ended the day at:	Home

Previous Next

COPY TRIPS: Page shown for any previously reported trips that the person confirmed. (Respondent will report the **trip purpose** for all copied trips; all other trip details are automatically copied behind the scenes)

Here are the details for <name's> trip from Home to School that were reported by another household member:

- Departed: <origin> at <time>
- Arrived: <destination> at <time>

Why did <Name> stop at <destination/ place y> Select… ▼

If "other" activity:
Please specify activity at <destination/ place y>

For all NEW trips each person adds, they will go through the normal trip details pages

Previous Next

End of the “Copy Trips” Section

The rest of the survey is the same for all participants, whether they copied trips or not

Previous Next

Only show to persons age 18+

Please tell us about activities that allowed <Name> to avoid making trips on <traveldate>.

If employed full/part/volunteer: **How much did <Name> work at home or telecommute for pay on <travel date>?**

Please estimate for all time worked (both during and outside regular business hours).

Numeric entry for 15 minute increments 0-24 hours

How much did <Name> shop online on <travel date>?

Please estimate for all time shopping online (whether or not a purchase was made).

Numeric entry for 15 minute increments 0-24 hours

Only show to the first person age 18+ in the HH who is answering their diary. Subsequent adults (other adults in HH) don't need to answer question.

On <traveldate>, which of the following occurred at <Name>'s home? Select all that apply.

- ❑ Mailed packages (e.g., FedEx, UPS, Post Office) were delivered
- ❑ Food (e.g., pizza, Chinese food) was delivered
- ❑ Someone came to do work at home (e.g., landscaping, cable service, house-cleaning, etc.)
- ❑ None of the above

Only shown to Pilot Respondents

Thank you for your participation – you are almost done!

You are one of the first people invited to participate throughout the region. We would like your thoughts on how we could improve. Your feedback will help us improve the study for everyone.

Were there any instructions or questions that were confusing or unclear?
How can we make it easier to participate in the study?

We welcome your suggestions for how to improve.

Optional text box

Do you have any general recommendations for how we can further improve this study?
What do you think would encourage your neighbors to participate if they were invited?

Please tell us your ideas and suggestions.

Optional text box

All respondents, all segments:

Thank you for your participation.

If you have any general comments that you would like to share, please enter them below.

Then, please click the “Next” button to submit your survey.

<If HHsize = 2+> If any household members still need to complete this survey, you will return to your household’s dashboard where you can start the next person’s survey.

Answering the text box is optional.

Previous Next

Show this page only once all HH members have completed the diary

<if Group 3 or Group 6 (Military)> **Congratulations, your household has completed the study!**
<if Group 4 (split HHs)> **Thank you for reporting your trips online! Once your other household members finish recording their travel in rMove, your household will have completed the study.**

Thank you very much for your participation in this important research.

<show if in Group 3 and not a tester (i.e. password does not begin with "x")>
The $10 gift certificate you selected will be sent within 10 business days.

<show if in Group 4 (Split HHs)>
Please ensure the other members of your household complete their surveys in rMove so that you can all collect your gift cards.

*<show to all>*You may now close your browser.

QUESTIONNAIRE DEVELOPMENT FOR SANDAG

BICYCLE INTERCEPT SURVEY

RSG
the science of insigh

1.21.2017

55 Railroad Row
White River Junction, VT 05001
802.295.4999
www.rsginc.com

1.0 SAMPLE PLAN

- Recruitment method: Intercept survey at various locations around San Diego County. Please refer to separate intercept plan
- Target respondent: Bicycle users
- Target sample size: up to 500 individuals are budgeted for receiving incentive in follow-on rMove study. Approximate goal of recruiting up to >1,000 people to complete the bike intercept survey.
- **Survey URL:**
  - https://study.sandag.org/sandag_int/pages/card?locale=en-US&machine=999&location=0
  - Note, the "machine" and "location" keys within the URL will sometimes change for the devices used in the field. That is normal and part of the survey.

2.0 INTERCEPT SURVEY QUESTIONNAIRE

INTERVIEWER SELF-COMPLETES THESE QUESTIONS

1. [*intercept_location*] *To be filled out by Interviewer:* **Please select your intercept location.**

   Please select one answer below.

   [dropdown list of locations]

2. [*intercept_location_dir*] *To be filled out by Interviewer:* **Please select the direction in which the bicycler was traveling past your location (closest match).**
   1. North
   2. East
   3. South
   4. West

TRIP AND PERSONAL DETAILS

3. [*intro*] **Hello, and thank you for taking two minutes to answer questions about your bicycle use in San Diego County. This information will help the San Diego Association of Governments better understand and plan for the needs of cyclists. Please click "Next" to continue**

4. *<show if sent back from Trip confirmation question [confirm]>* ***Please confirm the answers on this page, particularly trip START and END, before proceeding.***

   [*origin_purpose*] **Where did you first START this bike trip?**
   1. My home
   2. My work or a work-related place (e.g., meeting)
   3. My school
   4. Someone else's home
   5. A business (e.g., shopping, errand, banking, doctor, etc.)
   6. A restaurant
   7. A leisure activity (e.g., museum, gym, sporting event, etc.)
   8. Pickup or drop-off child at daycare, school, etc.
   9. Other

5. [*employment*] **What is your current employment status?**
   1. Employed full-time (paid) 35+ hours/week
   2. Employed part-time (paid) up to 35 hours/week
   3. Unpaid volunteer or intern
   4. *[Hide if origin_purpose = work]* Not currently employed

6. [*student*] **Are you currently a student (i.e., currently enrolled in classes)?**
   1. *[Hide if origin_purpose = school]* No, I am not currently enrolled as a student
   2. Yes, in higher education (e.g., college, university, adult education)

3. Yes, in high school (grades 9–12)
4. Yes, in grade school or middle school (grades K–8)
   Interviewer can just select "yes, higher education' if respondent is clearly over age 18.

7. [*dest_purpose*] **Where will you be at the END of this bike trip?**
   1. My home
   2. *[Show if employed or intern/volunteer]* My work or a work-related place (e.g., meeting)
   3. *[Show if student]* My school
   4. Someone else's home
   5. A business (e.g., shopping, errand, banking, doctor, etc.)
   6. A restaurant
   7. A leisure activity (e.g., museum, gym, sporting event, etc.)
   8. Pickup or drop-off child at daycare, school, etc.
   9. Other

TRIP CONFIRMATIONS (ROUND-TRIP, WORK-BASED, OR SCHOOL-BASED TRIPS)

8. *[confirm] Show if origin_purpose and dest_purpose are the same and are in (My home, My school, My work or a work-related place):* **You said you are beginning and ending this bike trip at <ORIGIN/DESTINATION> without stopping anywhere else, is that correct?**
   1. Yes
   2. No <*if selected, send back to the prior page to correct the origin or destination location, after which they should come back to these trip confirmation questions.*>

9. [*work*] *Show if person is employed or volunteer/intern AND if neither origin_purpose or dest_purpose = work ~~AND if dest_purpose is not Home~~:* **Since leaving home today, ~~have~~ did you or will you visit your place of employment before returning home?**
   1. Yes
   2. No
   3. N/A (e.g., I work from home)

10. [*school*] *Show if person is a student AND if neither origin_purpose or dest_purpose = school ~~AND if dest_purpose is not Home~~:* **Since leaving home today, did~~have~~ you or will you visit your school before returning home?**
    1. Yes
    2. No
    3. N/A (e.g., I only take online classes)

GEOCODERS

11. [*origin_loc*] **Where did you BEGIN this bike trip (address, business name, nearest intersection, or point of interest)?**

To search by address or business name:

1. Enter a street address, nearest intersection, or business name in the box below
2. Click on the blue search button to the right of the box
3. Click on the correct address from the list of results that appear
4. Click "Next" to continue

[Address search bar]

Example: 24 Ash Street, San Diego, CA
Example: 401 B St, San Diego, CA

12. [*dest_loc*] **Where will you END this bike trip (address, business name, nearest intersection, or point of interest)?**

To search by address or business name:

1. Enter a street address, nearest intersection, or business name in the box below
2. Click on the blue search button to the right of the box
3. Click on the correct address from the list of results that appear
4. Click "Next" to continue

[Address search bar]

Example: 24 Ash Street, San Diego, CA
Example: 401 B St, San Diego, CA

DEMOGRAPHICS

13. [*vehicle_count*] **Thank you; we're almost done.**
How many motor vehicles are there in your household?
    1. 0 (no vehicles)
    2. 1
    3. 2
    4. 3
    5. 4
    6. 5
    7. 6
    8. 7 or more vehicles

14. **For each age group, how many people live in your household? Please include yourself.**
    1. *[hhkids]* Children age 15 or younger [Number Selection Bar]
    2. *[hh16]* Children age 16–17 [Number Selection Bar]
    3. *[hhadults]* Adults age 18 or older. Remember – include yourself! [Number Selection Bar]

15. [*age*] **How old are you?**
    1. 16–17 years
    2. 18–24 years
    3. 25–34 years
    4. 35–44 years
    5. 45–49 years
    6. 50–54 years
    7. 55–59 years
    8. 60–64 years
    9. 65 years or older

    Interviewer to ask specific age. If needed prompt using categories

16. [*smartphone*] **Do you own a smartphone?**
    1. Yes, an Android smartphone.
    2. Yes, an Apple smartphone.
    3. Yes, another type of smartphone.
    4. No, I do not own a smartphone.

17. *[resident]* **Do you currently live in San Diego County?**
    1. Yes
    2. No, I'm only here temporarily (e.g., visiting, vacation)

CONCLUSION

18. [*email*] *Show if a respondent is a resident in San Diego County AND if they have an Android or Apple smartphone:*

    Thank you for your answers. As part of this study, we are inviting you to download a smartphone app and use it to record your travel for 7 days. After completing the rest of the study, you would receive a $20 gift card for your participation.

    Are you willing to participate? If so, please provide your email to continue.
    1. [email textbox, 30 characters long] @ [domain]. [org/com/edu, etc.]
    2. I choose not to participate.

19. [*thankyou*] **Thank you for participating in this regional bicycling survey.**

If invited to rMove: **Expect an email from us on Friday detailing your next steps as part of the San Diego Regional Transportation Study. Safe bicycling, and enjoy your day.**

INTERVIEWER SELF-COMPLETES QUESTIONS (NOT ASKED OF RESPONDENTS)

20. [*bikeparty*] *To be filled out by Interviewer.* **How many other people was the respondent biking with?**
    1. 0 (respondent was biking alone)
    2. 1 person
    3. 2 people
    4. 3 people
    5. 4 people
    6. 5 or more people

21. [*bikeshare*] *To be filled out by Interviewer.* **Was the respondent (or anyone with the respondent) using a DecoBike (bikeshare)?**
    1. Yes
    2. No

22. [*gender*] *To be filled out by Interviewer.*
    What was the respondent's gender?
    1. Male
    2. Female
    3. Don't know

23. [*language*] *To be filled out by Interviewer:*
    Please select the language in which you conducted this survey.
    1. English
    2. Spanish
    3. Other

24. [*language*] *To be filled out by Interviewer:*
    Please enter your initials
    1. [textbox]

APPENDIX B. INVITATION MATERIALS

FIGURE B-1: POSTCARD PRENOTICE (FRONT)

FIGURE B-2: POSTCARD PRENOTICE (BACK)

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

415 Laurel Street PMB 343
San Diego, CA 92101

You are invited to participate in a survey to help improve transportation in the San Diego region.

Le invitamos a participar en una encuesta para ayudar a mejorar el transporte en la región de San Diego.

In a few days, you will receive an invitation packet for an important transportation study. The San Diego Association of Governments (SANDAG) wants to better understand your travel needs to help prioritize future transportation improvements.

As one of a few households chosen to participate, your input will have a large impact.
Once your household participates, each adult will receive a gift card worth up to $20!

Your participation involves two parts: the first part asks basic questions about your household, while the second part asks the details of your daily travel activity.

To get started today:

Visit: sandag.org/study

Your password:

Or, call toll-free: 1 (844) 468-2570

Si desea obtener información en español, por favor comuníquese al 1 (844) 468-2570 o study@sandag.org

In compliance with the Americans with Disabilities Act (ADA), this document is available in alternate formats by contacting the SANDAG ADA Coordinator at (619) 699-1900 or (619) 699-1904 (TTY)

FIGURE B-3: ENGLISH INVITATION LETTER (FRONT)

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

<Letter Date>

<First and last name/City name resident
Street Address 1
Street Address 2
City, CA < #####>

Dear <First name /City name resident>,

You have been selected to help improve transportation in the San Diego region as part of the 2017 San Diego Regional Transportation Study. Your input will help the San Diego Association of Governments (SANDAG) better understand local travel needs and prioritize future transportation improvements. As one of a few households selected to participate, your input will have a large impact. Your participation will take about 15 minutes to get started, and then 5 minutes per day for up to one week. **As a thank you to households that complete the survey, each adult will receive their choice of an Amazon or Walmart gift card worth up to $20!**

PARTICIPATION IS EASY:

1 Tell us about your household and your typical travel. Please complete Part 1 this week!

Begin the study online with your password:
Study website: sandag.org/study
Password: <dynamically inserted>

Or, call toll-free: 1 (844) 468-2570
- Monday-Friday: 7 a.m. – 8 p.m. (Pacific)
- Saturday: 8 a.m. – 2 p.m. (Pacific)

Or, leave a message with the best time to call you back.

2 Your household will be assigned a specific week during which you will be asked to keep a "travel diary."
Completing your travel diary is easy, with most participants using a smartphone app called rMove.

If you already have your own smartphone:
You can quickly install rMove onto your phone (Available for Android and iOS).

If you do NOT own a smartphone:
That's okay, you also can participate online or by phone.

During your household's assigned week, remember to carry your smartphone with you everywhere you go. The rMove app will automatically capture your travel patterns. After each trip, you will be asked to provide additional details such as how and why you traveled. After each travel day, rMove will also ask a few questions about your day as a whole.

When all adults in your household have completed their surveys, your participation in the study is complete. We will then provide instructions on how to remove the app from your phone.

Your privacy is protected and your information is strictly confidential. Review our privacy policy at **sandag.org/study**

For more information about this study, please see the Frequently Asked Questions or visit **sandag.org/study**

Thank you in advance for your participation and for helping improve transportation in the San Diego region,

The San Diego Regional Transportation Study Team

In compliance with the Americans with Disabilities Act (ADA), this document is available in alternate formats by contacting the SANDAG ADA Coordinator at (619) 699-1900 or (619) 699-1904 (TTY)

415 Laurel Street PMB 343 | San Diego, CA 92101

FIGURE B-4: ENGLISH INVITATION LETTER—FREQUENTLY ASKED QUESTIONS (BACK)

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

FREQUENTLY ASKED QUESTIONS

Secure study website: sandag.org/study | **Email:** study@sandag.org | **Call toll-free:** 1 (844) 468-2570

GENERAL INFORMATION

What is the San Diego Regional Transportation Study about? This study collects information about daily transportation habits in the San Diego region: how we travel, where we go, what it costs, etc. The goal is to get a complete picture of transportation patterns across the region in order to better plan for future improvements.

How was I selected to participate? Invited households, such as yours, were randomly selected from across the San Diego region.

Why should I participate? The information gathered from this study will be used to understand transportation needs and plan for future transportation improvements. By participating, you ensure that your local needs are accurately represented. Your feedback will have a large impact because your household is one of a small number selected to participate.

What do I get for participating? Each adult participating via the smartphone app will receive a $20 gift card as a thank you when the study is complete. If your household instead participates by calling or completing the survey online, your household will receive a $10 gift card.

What if I don't make a lot of trips? No matter how much you travel, information about your transportation habits will help improve local transportation planning. Don't forget to include trips you make by walking, biking, taking transit, or using any other mode of travel, even if you don't drive.

What if my transportation habits during the study aren't my "typical" habits? That's OK – this study is about how you actually travel during the participation period. We will also ask how you typically travel around the region.

How is my personal privacy protected? All of your data is strictly confidential. Your information will be grouped with travel data from other households and will not be analyzed individually. The privacy policy for this study is available at sandag.org/study

How is this study different than others I may have been invited to complete? This is a regional study to help shape local plans for future transportation improvements. Other studies you may have been invited to participate in either collect data nationally (not just our region) or focus on a narrow topic (e.g., bus improvements).

HOW TO PARTICIPATE

How do I get started? Complete Part 1 of the study today by going to sandag.org/study or calling 1 (844) 468-2570. After Part 1, you will receive information about how to complete your travel diary for Part 2 of the study.

What will I need to complete the travel diary (Part 2 of the study)? Participants will need a compatible smartphone to keep their travel diary. Any iPhone 4S or newer and any Android version 4.4 or newer is compatible. If you have an Android smartphone, you can check your Android version by going to "Settings" and clicking "About phone".

What if I don't have a compatible smartphone? We want to hear from you, regardless of whether you own a smartphone. Any adult who does not own a smartphone can participate online or over the telephone. More information will be provided after your household completes Part 1.

What is the rMove™ app? rMove is a smartphone app that collects travel and trip information from invited participants. Information gathered is only used for the purpose of this study.

How do I keep my travel diary with rMove? Once installed, rMove will automatically identify and capture your travel patterns. A few minutes after you stop traveling, rMove will create a trip survey to ask you details such as how and why you traveled. You will also be asked a few questions at the end of each day. You can answer these questions any time, but please do not answer them while driving! This will take about 5 minutes per day.

How long will I need to keep my travel diary using rMove? Each household using the rMove smartphone app is assigned a seven-day period to participate. If your household participates by telephone or online, you are asked to participate for one day.

How do I know when I've completed the study? Once you've answered every survey for each of your travel days, you have completed Part 2 of the study and we will email you any final instructions that may be required.

STUDY OVERVIEW

This study has 2 parts	1 HOUSEHOLD INFO SURVEY	2 DAILY TRAVEL SURVEYS
Who takes the survey?	You	All members of your household. Adults should report travel information for their children.
How do I start the survey?	Go online or call with your password	Details are provided at the end of Part 1.
When do I take the survey?	Now, or as soon as convenient	Your household is assigned a specific time period during which you will keep your travel diary.
How long will it take?	About 15 minutes	About 5 minutes per person each day.
What is this survey about?	The basics of your household, including vehicles owned and usual travel habits.	We ask the details of each trip you make, such as how, why, or with whom you traveled.

After your household completes both parts of the study, you will receive a gift card as thanks!

In compliance with the Americans with Disabilities Act (ADA), this document is available in alternate formats by contacting the SANDAG ADA Coordinator at (619) 699-1900 or (619) 699-1904 (TTY)

FIGURE B-5: SPANISH INVITATION LETTER (FRONT)

SANDAG | ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

<Letter Date>

<First and last name/City name resident
Street Address 1
Street Address 2
City, CA < #####>

Estimado (a) <First name /City name resident>,

Usted ha sido seleccionado para ayudar a mejorar el transporte en la región de San Diego como parte del Estudio Regional de Transporte de San Diego de 2017. Su aportación ayudará a la Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) a entender mejor las necesidades de transporte local y darle prioridad a medidas de mejoramiento en el futuro. Su hogar es uno de los pocos seleccionados para participar, por lo tanto, su aportación tendrá un impacto muy importante. Su participación se llevará 15 minutos para empezar y 5 minutos más cada día hasta una semana como máximo. **Para agradecer a los hogares que llenen esta encuesta, ¡cada persona adulta tendrá la opción de recibir una tarjeta de regalo de Amazon o Walmart con un valor máximo de $20!**

SU PARTICIPACIÓN ES FÁCIL:

1. **Cuéntenos sobre su hogar y sus rutinas típicas de viaje. ¡Por favor complete la Parte 1 esta semana!**

Comience el estudio en línea con su contraseña:
Sitio web del estudio: sandag.org/study
Contraseña: <dynamically inserted>

O llame gratuitamente al: 1 (844) 468-2570
- Lunes a viernes: de 7 a.m. a 8 p.m. (Hora del Pacífico)
- Sábado: de 8 a.m. a 2 p.m. (Hora del Pacífico)

O deje un mensaje y díganos cuál es el mejor momento para comunicarnos con usted

2. **Se le asignará a su hogar una semana específica en la cual usted deberá llevar un "diario de viajes".** Llenar este diario de viajes es fácil. La mayoría de los participantes utilizan una aplicación para teléfonos inteligentes (smartphones) llamada rMove.

Si usted tiene un teléfono inteligente:
Usted puede rápidamente instalar rMove en su teléfono (disponible para Android y iOS).

Si usted NO tiene un teléfono inteligente:
No hay problema también puede participar en línea o vía telefónica

Durante la semana asignada a su hogar, asegúrese de llevar con usted su teléfono inteligente a todos los lugares que visite. La aplicación rMove capturará automáticamente sus patrones de viaje. Al final de cada viaje, se le pedirá que proporcione información adicional sobre su modo de transporte y razón del viaje. Después de cada día de viaje, rMove también le hará preguntas sobre su día en general.

Su participación en este estudio concluirá cuando todos los adultos en su hogar hayan llenado la encuesta. Posteriormente le proporcionaremos instrucciones para desinstalar la aplicación de su teléfono.

Su privacidad está protegida y su información es estrictamente confidencial. Usted puede revisar nuestra política de privacidad en sandag.org/study

Para obtener más información sobre este estudio, por favor vea la sección de preguntas frecuentes o visite sandag.org/study

Le agradecemos de antemano su participación y ayuda para mejorar el transporte en la región de San Diego.

El equipo del Estudio Regional de Transporte de San Diego

En cumplimiento con la Ley de Estadounidenses con Discapacidades (Americans with Disabilities Act [ADA]), este documento está disponible en diversos formatos. Usted puede tener acceso a estos llamando al coordinador de ADA de SANDAG al (619) 699-1900 o (619) 699-1904 (TTY).

415 Laurel Street PMB 343 | San Diego, CA 92101

FIGURE B-6: SPANISH INVITATION LETTER—FREQUENTLY ASKED QUESTIONS (BACK)

SANDAG | ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

PREGUNTAS FREQUENTES

Sitio web seguro: sandag.org/study | **Correo electrónico:** study@sandag.org | **Llamada gratuita:** 1 (844) 468-2570

INFORMACIÓN GENERAL

¿De qué se trata el Estudio Regional de Transporte de San Diego? El estudio recopila información sobre los hábitos de transporte diarios en la región de San Diego: nuestros medios de transporte, destinos, costo, etc. El objetivo es obtener un panorama completo sobre los patrones de transporte a través de la región para planear mejor medidas de mejoramiento en el futuro.

¿Cómo fui seleccionado para participar? Los hogares invitados a participar, como en su caso, fueron seleccionados al azar en toda la región de San Diego.

¿Por qué debo participar? La información recopilada del estudio se utilizará para entender las necesidades de transporte y para planear mejoras de transporte en el futuro. Con su participación, podemos asegurar de que sus necesidades locales están siendo debidamente representadas. Su opinión tendrá un impacto importante, ya que su hogar es uno de los pocos seleccionados para participar.

¿Qué obtendré a cambio por participar? Cada persona adulta que participe mediante la aplicación de teléfono inteligente recibirá una tarjeta de regalo de $20, en agradecimiento. Si su hogar decide participar por teléfono o llenando la encuesta en línea, entonces recibirá una tarjeta de regalo de $10.

¿Qué pasa si no hago muchos viajes? Independientemente del número de viajes que haga, la información sobre sus hábitos de transporte ayudará a mejorar la planeación de transporte. No olvide incluir viajes que haga a pie, en bicicleta, usando el transporte público o cualquier otro modo de transporte, incluso si usted no maneja.

¿Qué pasa si mis hábitos de transporte durante la encuesta no son mis hábitos 'típicos'? No hay problema. Este estudio es sobre la forma en que usted viaja durante el período de participación. También le preguntaremos cómo usted viaja típicamente en la región.

¿Qué medidas se están tomando para proteger mi privacidad? Toda la información obtenida es estrictamente confidencial. La información que usted proporcione se agrupará con la de otros hogares y no se analizará individualmente. La política de privacidad de este estudio está disponible en: sandag.org/study

¿Qué diferencia existe entre este estudio y otros a los cuales he sido invitado a participar? Este es un estudio regional para ayudar en el desarrollo de planes locales para hacer mejoras de transporte en el futuro. Otros estudios a los que probablemente se le haya invitado a participar recopilan información a nivel nacional (no solamente de nuestra región) o se enfocan en un tema específico (p. ej., mejoras al servicio de autobús).

FORMAS DE PARTICIPAR

¿Cómo puedo comenzar a participar? Complete la Parte 1 del estudio hoy mismo visitando sandag.org/study o llamando al 1 (844) 468-2570. Después de completar la Parte 1, usted recibirá información sobre cómo llenar su diario de viajes para la Parte 2 del estudio.

¿Qué necesito para llenar mi diario de viajes? (Parte 2 del estudio) Los participantes necesitarán un teléfono inteligente compatible para llevar un diario de viajes. Cualquier teléfono iPhone 4S o más nuevo, y cualquier Android versión 4.4 o más nuevo es compatible. Si usted tiene Android, puede revisar la versión de su teléfono en "Configuración" y seleccionar "Acerca del teléfono".

¿Y si no tengo un teléfono inteligente compatible? Queremos saber de usted independientemente si tiene un teléfono inteligente o no. Los adultos que no tienen un teléfono inteligente pueden participar en línea o vía telefónica. Más información será proporcionada después de que su hogar complete la primera parte.

¿Qué es la aplicación rMove™? rMove es una aplicación para teléfono inteligente que recopila información de viajes de personas que han sido invitadas a participar. La información recopilada se utiliza solamente para fines del estudio.

¿Cómo llevo mi diario de viajes con rMove? Una vez instalada, rMove identificará y capturará automáticamente sus patrones de viaje. Unos minutos después de que termine su viaje, la aplicación generará una encuesta de viajes para pedirle detalles sobre su modo de transporte y la razón de su viaje. También se le harán algunas preguntas al final de cada día. Usted puede contestar estas preguntas en cualquier momento. Por favor, ¡no conteste si va manejando! Esto le tomará aproximadamente cinco minutos por día.

¿Por cuánto tiempo debo llevar mi diario de viajes utilizando rMove? A todos los hogares que utilicen la aplicación rMove se les asignará un período de siete días para participar. Si su hogar participa por teléfono o en línea, se le pedirá que participe durante un día.

¿Cómo sé cuándo he concluido el estudio? Una vez que conteste las encuestas por cada uno de los días de viaje, usted habrá concluido la Parte 2 del estudio, y de ser necesario, le enviaremos un correo electrónico con instrucciones finales.

RESUMEN DEL ESTUDIO

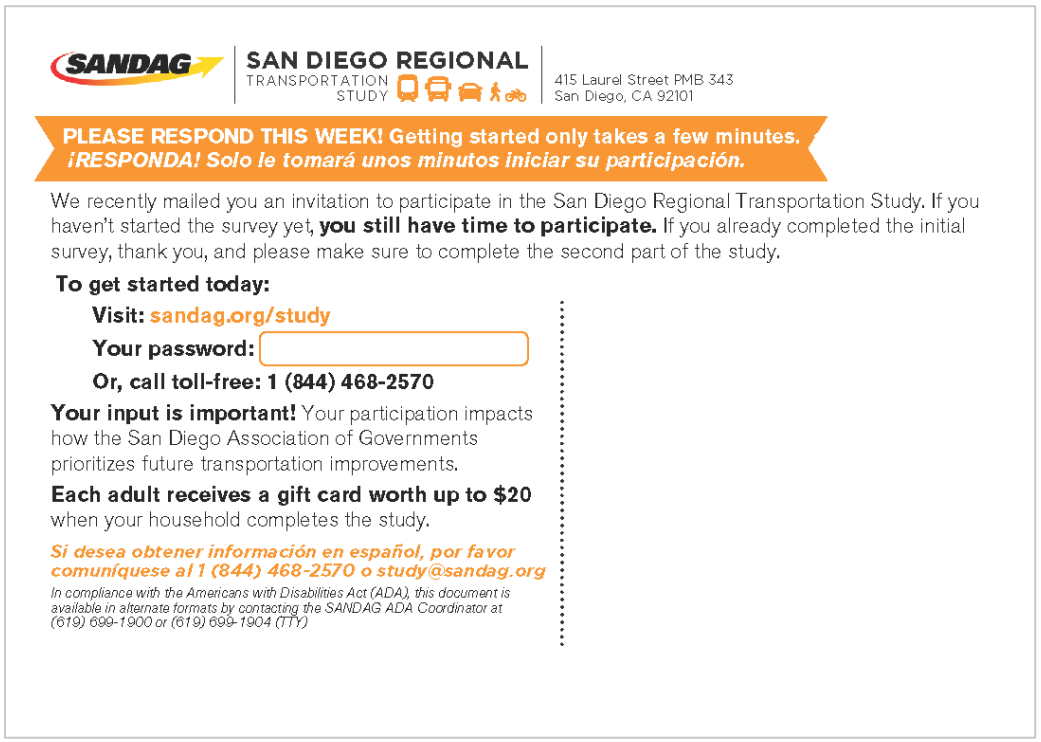
Este estudio consiste de 2 partes	1 ENCUESTA SOBRE EL HOGAR	2 ENCUESTA DIARIA DE VIAJES
¿Quién realiza la encuesta?	Usted	Todos los miembros de su hogar. Las personas adultas deben informar sobre los viajes de sus hijos.
¿Cómo puedo comenzar la encuesta?	En línea o por teléfono utilizando su contraseña	Puede ver los detalles al final de la Parte 1.
¿Cuándo debo de llenar la encuesta?	Ahora mismo, o cuando sea conveniente	Su hogar será asignado un período de tiempo específico durante el cual debe llevar un diario de viajes.
¿Cuánto tiempo tomará?	Unos 15 minutos	Aproximadamente 5 minutos por persona, por día
¿De qué se trata la encuesta?	Información básica sobre su hogar, incluyendo vehículos y hábitos de viaje.	Le pediremos detalles de cada viaje que hace, incluyendo cómo viajó, por qué y con quién.

Una vez que su hogar complete ambas partes del estudio, en agradecimiento le entregaremos una tarjeta de regalo.

En cumplimiento con la Ley de Estadounidenses con Discapacidades (Americans with Disabilities Act [ADA]), este documento está disponible en diversos formatos. Usted puede tener acceso a estos llamando al coordinador de ADA de SANDAG al (619) 699-1900 o (619) 699-1904 (TTY).

FIGURE B-7: REMINDER POSTCARD (FRONT)

FIGURE B-8: REMINDER POSTCARD (BACK)



APPENDIX C. PUBLIC OUTREACH MATERIALS

In addition to the printed invitation materials provided in Appendix B, this appendix lists the materials used during the study's communications and outreach efforts.

PROJECT LOGOS

FIGURE C-1: PROJECT LOGO (ENGLISH)

FIGURE C-2: PROJECT LOGO (SPANISH)

The following materials are included in the pages that follow.

MEDIA RELATIONS

- Press release—English version
- Press release—Spanish version
- Press release (Phase 2)—Spanish version
- Spanish media talking points
- News articles—Spanish media
- News hits—Spanish broadcast television clips

PUBLIC/COMMUNITY OUTREACH

- Email to stakeholders
- Civic and neighborhood contacts/stakeholder list

COLLATERAL MATERIALS

- Door hanger—English version
- Door hanger—Spanish version
- Flier—English version
- Flier—Spanish version

SOCIAL MEDIA

- Social media posts (SANDAG and CBO partners)

COMMUNITY-BASED ORGANIZATION PARTNERSHIPS

- Training FAQs—English/Spanish
- Project schedule
- Regional Household Transportation Study Outreach Agreement—English/Spanish
- Training guide for CBOs
- Scenarios—Spanish
- Talking points—Spanish
- Final report form
- Fact sheet—English/Spanish
- Survey options infographic flier

From: Gao, Helen [Helen.Gao@sandag.org]
Sent: Monday, August 29, 2016 10:50 AM
To: Gao, Helen
Cc: Gao, Helen
Subject: SANDAG Launches Major Transportation Survey in SD Region

SANDAG NEWS

Date: August 29, 2016
For Release: Immediately
Contact: David Hicks, (619) 699-6939, or david.hicks@sandag.org

MORE THAN 200,000 HOUSEHOLDS COUNTYWIDE WILL BE INVITED TO PARTICIPATE IN TRANSPORTATION SURVEY

Data will be Used to Enhance Regional Planning

Starting this week, SANDAG will invite approximately 200,000 households in San Diego County to participate in a study to help transportation planners better understand how, when, and why residents travel in the region. The results of the study will be used to help develop infrastructure projects and programs to better meet regional transportation needs.

One in five households in the region will be randomly selected to participate in the San Diego Regional Transportation Study. Most participants will be asked to use a smartphone application to answer questions about their daily travel choices, with some respondents completing the study online or by phone.

"Good participation by San Diego County residents in this study is vital to our region's ability to address traffic congestion," SANDAG Board of Directors Chair and County Board of Supervisors Chair Ron Roberts said. "Without accurate and up-to-date data on how residents use the transportation network, we would not be able to develop effective solutions."

Participants will be prompted to answer questions about when and where they travel; whether they drive alone, carpool, vanpool, walk, bike, or use public transit; and how much their travel activity costs (e.g., parking and transit fares).

Participation in the confidential survey is by invitation only. The random selection process will ensure a representative sample of residents with varied demographics and travel behaviors from around the region. Participants whose households complete the study will receive either a $10 or $20 gift card per adult, depending on the method they use to complete the survey.

Residents will be invited to participate on a rolling basis, through late October. All of the data is anticipated to be collected by November 2016.

A similar travel study for the San Diego region was completed in 2006. SANDAG typically conducts a study of this magnitude every ten years.

SANDAG has engaged Resource Systems Group, Inc. (RSG) to help conduct this study. For more information, visit sandag.org/study.

###

About SANDAG
The San Diego Association of Governments (SANDAG) is the San Diego region's primary public planning, transportation, and research agency, providing the public forum for regional policy decisions about growth, transportation planning and construction, environmental management, housing, open space, energy, public safety, and binational topics. SANDAG is governed by a Board of Directors composed of mayors, council members, and supervisors from each of the region's 18 cities and the county government.

FACEBOOK: SANDAGregion
TWITTER: @SANDAG
YOUTUBE: SANDAGregion

Helen Gao
Senior Public Information Officer

SANDAG
(619) 699-1950
401 B Street, Suite 800, San Diego, CA 92101

Facebook | Twitter | YouTube

401 B Street, Suite 800
San Diego, CA 92101-4231
(619) 699-1900
Fax (619) 699-1905
www.sandag.org

NOTICIAS

Para difusión inmediata

Fecha: 29 de agosto de 2016
Persona de contacto: David Hicks, (619) 699-6939, david.hicks@sandag.org

MÁS DE 200,000 HOGARES EN TODO EL CONDADO RECIBIRÁN UNA INVITACIÓN PARA PARTICIPAR EN UN ESTUDIO DE TRANSPORTE

Los datos recopilados se utilizarán para mejorar la planificación regional

Este otoño, la Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) invitará aproximadamente a 200,000 hogares del condado de San Diego a participar en un estudio para ayudar a los planificadores de transporte a entender mejor el porqué, cómo y cuándo viajan los residentes dentro de la región. Los resultados del estudio se utilizarán para ayudar a desarrollar proyectos de infraestructura y programas para satisfacer mejor las necesidades de transporte.

Uno de cada cinco hogares en la región será seleccionado aleatoriamente para participar en el Estudio de Transporte Regional de San Diego. Se les pedirá a la mayoría de los participantes que utilicen una aplicación para teléfonos inteligentes (Smartphone) para contestar varias preguntas acerca de sus alternativas de viaje diarias, sin embargo, algunos de los encuestados podrán contestar el estudio en línea o por teléfono.

"Obtener una buena participación de los residentes de San Diego en este estudio es vital para la capacidad de nuestra región de hacer frente a la congestión de tráfico", mencionó Ron Roberts, Jefe de la Mesa Directiva de SANDAG y Presidente de la Junta de Supervisores del Condado de San Diego. "Sin datos precisos y actualizados sobre cómo los residentes utilizan la red de transporte, no seremos capaces de crear soluciones efectivas".

Se les pedirá a los participantes que respondan preguntas acerca de cuándo y hacia dónde viajan; si conducen solos; si comparten sus viajes en auto o camioneta; andan a pie; utilizan la bicicleta o el transporte público; y los costos de sus actividades de viaje (p. ej., estacionamiento y tarifas de transporte).

La participación en el estudio confidencial es únicamente por invitación. El proceso de selección aleatorio garantizará una muestra representativa de los residentes con características demográficas y comportamientos de viaje variados en la región. Los participantes cuyos hogares completen el estudio recibirán una tarjeta de regalo por $10 o $20 por persona adulta, dependiendo del método que usen para participar.

Los participantes serán invitados a colaborar de manera continua desde inicios de septiembre hasta finales de octubre. Se prevé que toda la información del estudio será recopilada en noviembre de 2016.

En 2006 se realizó un estudio de transporte similar en la región de San Diego. SANDAG típicamente lleva a cabo un estudio de esta magnitud cada 10 años.

SANDAG ha contratado a la empresa Resource Systems Group, Inc. (RSG) para ayudar a la agencia a la realización de este estudio.

Para más información por favor visite sandag.org/study.

###

Acerca de SANDAG

La Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) es la principal agencia pública de planificación, transporte e investigación en la región de San Diego que proporciona un foro público para toma de decisiones sobre políticas regionales acerca del crecimiento, planificación de transporte y construcción, gestión ambiental, vivienda, espacios abiertos, energía, seguridad pública y asuntos binacionales. SANDAG está regida por una Mesa Directiva integrada por alcaldes, regidores y supervisores de cada una de las 18 ciudades de la región y el gobierno del condado.

Medios sociales:
FACEBOOK: SANDAGregion
TWITTER: @SANDAG
YOUTUBE: SANDAGregion

NOTICIAS

Fecha: 13 de enero de 2017
Para difusión: de inmediato
Persona de contacto: Helen Gao, (619) 699-1950 o helen.gao@sandag.org

APROXIMADAMENTE 200,000 HOGARES EN TODO EL CONDADO SERÁN INVITADOS A PARTICIPAR EN LA SEGUNDA FASE DE UN ESTUDIO DE TRANSPORTE
LOS RESULTADOS SE UTILIZARÁN PARA MEJORAR LA PLANIFICACIÓN REGIONAL

La Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) lanzará esta semana la segunda fase del Estudio de Transporte Regional de San Diego, para la cual se invitarán aproximadamente a 200,000 hogares del condado de San Diego a participar en una encuesta sobre sus comportamientos de viaje.

La información recopilada le servirá a los planificadores de transporte para entender mejor el porqué, cómo y cuándo viajan los residentes dentro de la región. Los resultados servirán para desarrollar proyectos y programas de infraestructura, y así satisfacer mejor las necesidades de transporte.

A la mayoría de los participantes se les pedirá que utilicen una aplicación para teléfonos inteligentes (smartphone) para contestar varias preguntas acerca de sus opciones de viaje diarias; sin embargo, algunos de ellos podrán llevar a cabo el estudio en línea o por teléfono.

Se les pedirá a los participantes que respondan preguntas acerca de cuándo y hacia dónde viajan; si conducen solos o si comparten el viaje en auto o camioneta; si andan a pie, en bicicleta o si usan el transporte público; al igual que el costo de sus actividades de viaje (p. ej., tarifas de estacionamiento y de transporte).

La información recopilada como parte de este estudio se presentará en forma de resumen y no contendrá ninguna información que pueda identificar personalmente a los participantes. SANDAG se compromete con la privacidad de los encuestados y no venderá, intercambiará o compartirá con terceros ningún tipo de información personal que se obtenga de las encuestas.

La participación en la encuesta confidencial es únicamente por invitación. Mediante el proceso de selección aleatorio se logrará obtener una muestra representativa de los residentes con características demográficas y comportamientos de viaje variados en la región.

Los residentes serán invitados a participar de forma continua hasta finales de febrero. Se espera recopilar toda la información del estudio para finales de marzo de 2017.

La primera fase del estudio se llevó a cabo en el otoño de 2016, para la cual se solicitó la participación de aproximadamente 45,000 hogares. Entre las dos fases, uno de cada cinco hogares de la región será seleccionado de forma aleatoria para participar en el estudio. En 2006 se realizó un estudio de transporte similar en la región de San Diego. SANDAG normalmente lleva a cabo un estudio de esta magnitud cada 10 años.

SANDAG ha contratado a la empresa Resource Systems Group, Inc. (RSG) para ayudar a la agencia a llevar a cabo este estudio. Para obtener más información, visite sandag.org/study.

###

Acerca de SANDAG

La Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) es la principal agencia pública de planificación, transporte e investigación en la región de San Diego que proporciona un foro público para toma de decisiones sobre políticas regionales acerca del crecimiento, planificación de transporte y construcción, gestión ambiental, vivienda, espacios abiertos, energía, seguridad pública y asuntos binacionales. SANDAG está regida por una Mesa Directiva integrada por alcaldes, regidores y supervisores de cada una de las 18 ciudades de la región y el gobierno del condado.

Medios sociales:
FACEBOOK: SANDAGregion
TWITTER: @SANDAG
YOUTUBE: SANDAGregion

Cook + Schmid

PUBLIC RELATIONS
PUBLIC AFFAIRS
ADVERTISING
MARKETING
CREATIVE TECHNOLOGY
INTERACTIVE
SOCIAL MEDIA

Cook + Schmid
619 814 2370
740 13th Street, Suite 502
San Diego, California 92101
cookandschmid.com

Talking Points for Spanish Media
SANDAG Regional Transportation Survey

Estudio regional de transporte de San Diego
Puntos importantes para entrevistas con medios de comunicación en español

Acerca del estudio:

- SANDAG está llevando a cabo un estudio para ayudar a los planificadores de transporte a entender mejor por qué, cómo y cuándo se transportan los habitantes del condado de a lo largo de la región.
- Los resultados de este estudio servirán únicamente para desarrollar proyectos y programas de infraestructura para satisfacer las necesidades de transporte; y no se podrán utilizar para cualquier otro propósito.
- Más de 200,000 hogares serán invitados a participar. Esto significa que uno de cada cinco hogares en la región recibirán la invitación.
- Los hogares fueron seleccionados al azar para asegurar la obtención de una muestra representativa de habitantes con diversas características demográficas y rutinas de viaje.
- Se está invitando a los hogares continuamente desde enero hasta finales de febrero. Se calcula que toda la información será recopilada a finales de marzo de 2017.
- Si alguien está interesado en participar pero no recibió una invitación puede enviar un correo electrónico a study@sandag.org para obtener información sobre cómo participar.
- SANDAG lleva a cabo estudios de esta magnitud cada diez años. El último estudio se realizó en 2006.
- Desde 2006 se han mejorado los métodos para la realización de este estudio como la utilización de una aplicación para teléfonos inteligentes con el fin de obtener información confiable y exacta.
- Para obtener más información acerca de este estudio visite la página sandag.org/study

Participación mediante un teléfono inteligente:

- Se le pedirá a la mayoría de los participantes que utilicen una aplicación en su teléfono inteligente que se llama *rMove*. Con esta aplicación podrán contestar las preguntas sobre sus viajes diarios.
- A los participantes que utilicen el teléfono inteligente se les pedirá que registren la información de sus viajes durante una semana.
- Después de bajar la aplicación los participantes tendrán que responder unas cuantas preguntas cada vez que viajen y un pequeña encuesta al final de cada día de viaje.

· Las preguntas del sondeo incluyen cuándo y hacia donde han viajado los participantes; si viajaron solos, en automóvil o camioneta compartidos, caminaron, utilizaron la bicicleta o el transporte público; y el costo de los desplazamientos como el estacionamiento y tarifas de transporte.
· Los participantes cuyos hogares utilicen la aplicación en su teléfono inteligente recibirán un certificado de regalo con valor de $20.

Participación en línea:
· Si los participantes invitados no cuentan con un teléfono inteligente podrán completar el estudio en línea en sandag.org/study o por vía telefónica.
· Los participantes que completen el estudio en línea o por vía telefónica tendrán que reportar sus viajes de un solo día.
· Los participantes cuyos hogares completaron el estudio en línea o por vía telefónica recibirán un certificado de regalo con valor de $10.

Confidencialidad:
· La información recopilada durante el estudio es totalmente confidencial. Los resultados se presentarán en forma resumida y no contendrán ninguna información de identificación personal.
· SANDAG se compromete a proteger la privacidad de todos los participantes del estudio.

Organizaciones comunitarias:
· Para asegurar una muestra representativa de participantes, SANDAG se asoció con organizaciones sin fines de lucro para llegar a los vecindarios con mayor densidad de habitantes de origen hispano.
· Todos los materiales y folletos están en español para asegurar que los participantes invitados comprendan de qué se trata el estudio y lo que pueden recibir por participar.

###

el latino San Diego
☎ 619-426-1491

Relevante encuesta efectúa SANDAG; busca planificar el Transporte Regional y pide al público colaborar con la misma

SAN DIEGO.- La Asociación de Gobiernos de San Diego (SANDAG) trabaja en la segunda fase del estudio de Transporte Regional de San Diego donde se plantea encuestar, telefónicamente, a 200, 000 jefes de familia sobre su experiencia de viaje: si utiliza el transporte público o se mueve en vehículos particulares, motocicleta o bicicleta.

Se indicó que la información recopilada le servirá a los planificadores de transporte para entender mejor el porqué, cómo y cuándo viajan los residentes dentro de la región. Los resultados servirán para desarrollar proyectos y programas de infraestructura, y así satisfacer mejor las necesidades de transporte.

También se informó que la mayoría de los participantes se les pedirá que utilicen una aplicación para teléfonos inteligentes (smartphone) para contestar varias preguntas acerca de sus opciones de viaje diarias; sin embargo, algunos de ellos podrán llevar a cabo el estudio en línea o por teléfono.

Naturaleza del cuestionario

Se anticipó que se le pedirá a los participantes que respondan preguntas acerca de cuándo y hacia dónde viajan; si conducen solos o si comparten el viaje en auto o camioneta; si andan a pie, en bicicleta o si usan el transporte público; al igual que el costo de sus actividades de viaje (p. ej., tarifas de estacionamiento y de transporte).

Absoluta confidencialidad

La información recopilada como parte de este estudio se presentará en forma de resumen y no contendrá ninguna información que pueda identificar personalmente a los participantes. SANDAG se compromete con la privacidad de los encuestados y no venderá, intercambiará o compartirá con terceros ningún tipo de información personal que se obtenga de las encuestas.

La participación en la encuesta confidencial es únicamente por invitación. Mediante el proceso de selección aleatorio se logrará obtener una muestra representativa de los residentes con características demográficas y comportamientos de viaje variados en la región.

Los residentes serán invitados a participar de forma continua hasta finales de febrero.

La primera fase del estudio se llevó a cabo en el otoño de 2016, para la cual se solicitó la participación de aproximadamente 45,000 hogares. Entre las dos fases, uno de cada cinco hogares de la región será seleccionado de forma aleatoria para participar en el estudio. En 2006 se realizó un estudio de transporte similar en la región de San Diego. SANDAG normalmente lleva a cabo un estudio de esta magnitud cada 10 años.

Entrevistada sobre la encuesta Elisa Arias, directora de Planificación Regional de SANDAG dijo que la encuesta es aplicada a 1 de cada 5 hogares al azar y se lleva a cabo en las 18 ciudades que forman la Región San Diego.

Anticipó que los datos recabados se esperan que estén listos para fines de marzo próximo y la información es conservada de manera confidencial, respetando siempre la privacidad de las personas.

Arias llamó a la población a colaborar con la encuesta, pues será determinante para los presentes y futuros proyectos del sistema de transporte colectivo de las ciudades del condado.

Mientras la directora de la Casa Familiar de San Ysidro, Lisa Cuesta, destacó que esa institución está apoyando en forma decisiva la realización de la encuesta sobre transporte regional pues al ser un servicio fundamental para la comunidad, se dio a conocer que para mayor información, favor consultar los sitios: study@sandag.org y sandag.org/study.

Horacio Rentería

La Prensa SAN DIEGO
PRINT • ONLINE • MOBILE APP CELEBRATING 40 YEARS EST. 1976

SANDAG Lanza Segunda Fase de Estudio de Transporte

February 17, 2017

Por Ana Gómez Salcido

La Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) lanzó la segunda fase del Estudio de Transporte Regional de San Diego, con la que se invita a aproximadamente 200,000 hogares del condado de San Diego a participar en una encuesta sobre sus comportamientos de viaje.
La primera fase del estudio se llevó a cabo en el otoño de 2016, para la cual se solicitó la participación de aproximadamente 45,000 hogares. Entre las dos fases, una de cada cinco hogares de la región será seleccionado de forma aleatoria para participar en el estudio. En 2006 se realizó un estudio de transporte similar en la región de San Diego. SANDAG normalmente lleva a cabo un estudio de esta magnitud cada 10 años.
"SANDAG está realizando este estudio para entender mejor los patrones de viaje", dijo Elisa Arias, la encargada de Planificación de Transporte en SANDAG. "Queremos saber cómo se trasladan las personas en San Diego, el porqué, y cuando viajan dentro de la región, ya sea para ir a la escuela, al trabajo, de compras, o para visitar a su familiares o amigos. Queremos saber si van en un automóvil solos, o si viajan en camioneta con otras personas, si utilizan el transporte público, o si se van caminando o en bicicleta".
La invitación para participar en la encuesta ya fue enviada a algunos de los 200 mil hogares que fueron elegidos de manera aleatoria, y el resto de las invitaciones serán enviadas en las siguientes semanas.
"Para elegir los hogares participantes se hizo una muestra aleatoria para tener representatividad en las distintas comunidades de San Diego, con diferentes características demográficas para que sea una muestra representativa de toda la región", dijo Arias. "Las personas que ya recibieron la invitación para participar en el estudio, tienen que seguir las instrucciones, y podrán emitir las respuestas de la encuesta por medio de una aplicación para teléfonos inteligentes, por Internet, o por teléfono".
Las viviendas que participen en el estudio recibirán una tarjeta de regalo con un valor de 20 dólares que podrán utilizar en diferentes tiendas.
Los resultados servirán para desarrollar proyectos y programas de infraestructura, y así satisfacer mejor las necesidades de transporte. La información recopilada como parte de este estudio se presentará en forma de resumen y no contendrá ninguna información que pueda identificar personalmente a los participantes. Se espera recopilar toda la información del estudio para finales de marzo de 2017. La información es de vital importancia para las agencias estatales y locales de planeación que buscan entender cómo se está adaptando el sistema de transporte al crecimiento, desarrollo y otros cambios en toda la región.
"Estamos trabajando con organizaciones sin fines de lucro para alcanzar a diferentes residentes y comunidades", agregó Arias. "Para nosotros es muy importante tener la participación de la comunidad latina y de todas las diferentes comunidades de la región."

De acuerdo a SANDAG, esta agencia se
compromete con la privacidad de los encuestados y no venderá, intercambiará o compartirá con terceros ningún tipo de información personal que se obtenga de las encuestas.
SANDAG contrató a la empresa Resource Systems Group, Inc. (RSG) para ayudar a la agencia a llevar a cabo este estudio. Las personas que no recibieron una de las invitaciones de SANDAG pero desean participar en el Estudio de Transporte Regional de San Diego pueden visitar el portal de Internet de www.sandag.org/study o llamar al 1 (844) 468-2570 para obtener más información.

La Prensa SAN DIEGO
PRINT • ONLINE • MOBILE APP CELEBRATING 40 YEARS EST. 1976

SANDAG Launches New Study Phase

February 17, 2017

By Ana Gomez Salcido

SANDAG launched the second phase of the San Diego Regional Transportation Study, inviting approximately 200,000 households in San Diego County to participate in a survey of their travel behaviors.

The first phase of the study occurred in fall 2016, during which time about 45,000 households were invited to participate. Between both phases, one in five households in the region will be randomly selected to join the study. A similar study for the San Diego region was completed in 2006. SANDAG typically conducts a study of this magnitude every 10 years.

"SANDAG is doing this study to better understand the regional travel behaviors," said SANDAG Principal Regional Planner Elisa Arias. "We want to know how, why, and when people travel in San Diego. We want to know if people travel alone or if they carpool, we want to know if people walk, bike or use the public transit."

Some of the 200,000 households invited already received their invitation. The rest of the invitations will arrive in the following weeks.

"The household participants were randomly selected to have an even representation of all the different communities in the region, and to include the different demographics that represent San Diego County," Arias said. Households participating in the study will receive a $20 gift card.

The results will be used to help develop infrastructure projects and programs to better meet regional transportation needs.

The information gathered as part of the study will be presented in summary fashion and will not contain any personally identifiable information.

All of the data is anticipated to be collected by the end of March 2017. The information gathered is vital for state and local planning agencies to understand how the transportation system is coping with growth, development, and other changes across the region.

"We are working with different community organizations to engage more people in the community," Arias added. "For us is very important to have the participation of the Latino community and from all the different communities in San Diego."

According to SANDAG, this local agency is committed to protecting the privacy of survey participants. The agency will not sell, trade, or share any personal information collected in its surveys with any third party.

People interested in participating in the San Diego Regional Transportation Study, that didn't receive an invitation, can visit www.sandag.org/study or call 1 (844) 468-2570 for more information.

Telemundo SANDAG

Telemundo Announcement

Univision Announcement

Televisa SANDAG

Cook + Schmid

Date: 07.14.16
Client: RSG/SANDAG

Email to Community Organizations/Member Agencies

Send Date: Tuesday, August 30
Subject Line: Please Share: San Diego Regional Transportation Study

This fall, the San Diego Association of Governments (SANDAG) is inviting more than 1 in 5 households in San Diego County to participate in a study to collect detailed information about their travel activities and behaviors. Participants will be asked to use a smartphone app to answer questions about their daily travel behavior, such as how they travel, where they go, and how much it costs. The information gathered will help SANDAG understand local transportation needs and plan for future transportation improvements.

SANDAG needs your help to spread the word to your constituents. To get a complete picture of transportation habits throughout the region, we need invited households to participate. The more data we receive, the better we can plan for future transportation needs. We would appreciate it if you could announce the study and encourage people who received an invitation to participate. You are welcome to use the attached flier and fact sheet to provide background information. A few sample social media posts also are attached for sharing on your Facebook and/or Twitter accounts.

For additional information, please visit sandag.org/study. If you have any questions please don't hesitate to contact us.

Thank you for your consideration.

Sincerely,
XX

Cook + Schmid

PUBLIC RELATIONS
PUBLIC AFFAIRS
ADVERTISING
MARKETING
CREATIVE TECHNOLOGY
INTERACTIVE
SOCIAL MEDIA

Cook + Schmid
619 814 2370
3033 Fifth Avenue, Suite 200
San Diego, California 92103
cookandschmid.com

Civic/Neighborhood Organization Contacts

Organization	Category
Adams Avenue Business Assn	Citywide
Allied Gardens Community Council	Citywide
Asian Business Association of San Diego	Minority Chambers
Associated General Contractors San Diego	Diversity Groups
BAME Renaissance, Inc. CDC	Citywide
Bankers Hill/Park West Community Assn	Citywide
Barrio Station	Southbay
Bayside Community Center	Citywide
Bird Rock Community Council	Citywide
Black Contractors Association	Diversity Groups
Black Mountain Ranch Community Assn	Citywide
Bonita Business & Professional Association (BBPA)	Southbay
Building Industry Assn	Citywide
Carmel Mountain Ranch Planning Group	Citywide
Carmel Valley Community Leader	Citywide
Carmel Valley Planning Board	Citywide
Catfish Club	Diversity Groups
Central San Diego Black Chamber of Commerce	Minority Chambers
Chicano Park Steering Committee	Southbay
Chula Vista Chamber of Commerce	Southbay
Chula Vista Civic Association	Southbay
Chula Vista Community Collaborative	Southbay
City Heights Business Assn	Citywide
City Heights Town Council	Citywide
Clairemont Community Planning Group	Citywide
Coalition of Neighborhood Councils	Southbay
College Area BID	Citywide
College Area Community Planning Board	Citywide
Coronado Chamber of Commerce	Southbay
Coronado Community Development Agency	Southbay
Del Mar Mesa Planning Board	Citywide
Eastern Area Communities Planning Committee	Citywide
El Cerrito Community Council	Citywide
Environmental Health Coalition	Southbay
Greater Clairemont Chamber of Commerce	Citywide
Greater Golden Hill Planning Committee	Citywide

Imperial Beach Chamber of Commerce	Southbay
Imperial Beach Redevelopment Agency	Southbay
Kearny Mesa Planning Group	Citywide
Kensington-Talmadge Planning Group	Citywide
La Jolla Community Planning Association	Citywide
Latino Builder's Industry Association	Diversity Groups
Midway/North Bay Community Planning Advisory Committee	Citywide
Mira Mesa Planning Group and Town Council	Citywide
Miramar Ranch North Community Leader	Citywide
Mission Beach Precise Planning Committee	Citywide
Mission Beach Town Council	Citywide
Mission Hills BID	Citywide
Mission Hills Town Council	Citywide
Mission Valley Planning Group	Citywide
National City Chamber	Southbay
Navajo Community Planning Committee	Citywide
Ocean Beach Planning Board	Citywide
Ocean Beach Town Council	Citywide
Old Town Chamber of Commerce	Citywide
Old Town Community Planning Group	Citywide
Pacific Beach Community Planning Group	Citywide
Pacific Beach Town Council	Citywide
Peninsula Communities Planning Group	Citywide
Rancho Bernardo Planning Group	Citywide
Rancho Penasquitos Planning Board	Citywide
Rancho Penasquitos Town Council	Citywide
Rolando Park Community Council	Citywide
Sabre Springs Planning Group	Citywide
San Diego Apartment Assn	Citywide
San Diego Assn of Realtors	Citywide
San Diego North Chamber of Commerce	Citywide
San Diego Regional Chamber of Commerce	Citywide
Scripps Ranch Planning Group	Citywide
Serra Mesa Planning Group	Citywide
South County Economic Development Council	Citywide

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

Help improve transportation in your community!

Dear neighbor,

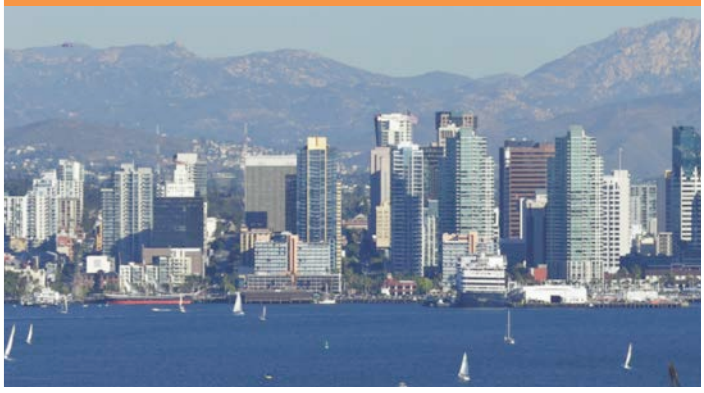
Sorry we missed you. We're visiting select households to discuss the San Diego Regional Transportation Study.

Your household is one of a few invited to participate in this study, and your input is important.

Once you complete the study, you'll receive a gift card as thanks for your participation.

We need your input!

Please follow the instructions on the postcard you received in the mail to get started.



Thank you for your time. We hope you'll participate.

Sincerely,
South Bay Community Services

For more information, visit **sandag.org/study**
or call toll-free: 1 (844) 468-2570

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

Help improve transportation in your community!

Dear neighbor,

Sorry we missed you. We're visiting select households to discuss the San Diego Regional Transportation Study.

Your household is one of a few invited to participate in this study, and your input is important.

Once you complete the study, you'll receive a gift card as thanks for your participation.

We need your input!

Please follow the instructions on the postcard you received in the mail to get started.

Thank you for your time. We hope you'll participate.

Sincerely,
South Bay Community Services

For more information, visit **sandag.org/study**
or call toll-free: 1 (844) 468-2570

SANDAG | ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

¡Ayude a mejorar el transporte en su comunidad!

Estimado vecino(a),

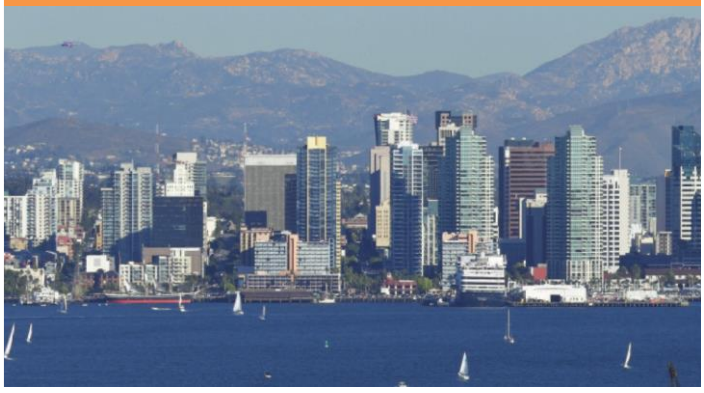
Sentimos no haberlo encontrado. Estamos visitando algunos hogares para hablar sobre el Estudio de Transporte Regional de San Diego.

Su hogar es uno de los pocos invitados a participar en el estudio; sus comentarios son importantes.

Al terminar el estudio, recibirá una tarjeta de regalo de agradecimiento por su participación.

¡Necesitamos su ayuda!

Para comenzar, siga las instrucciones en la postal que recibió por correo.



Gracias por su tiempo. Esperamos que pueda participar.

Atentamente,
South Bay Community Services

Para más información visite **sandag.org/study**
o llame gratis al: 1 (844) 468-2570

SANDAG | ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

¡Ayude a mejorar el transporte en su comunidad!

Estimado vecino(a),

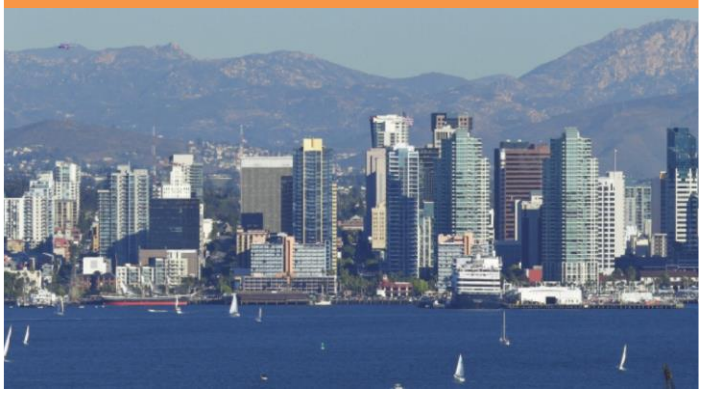
Sentimos no haberlo encontrado. Estamos visitando algunos hogares para hablar sobre el Estudio de Transporte Regional de San Diego.

Su hogar es uno de los pocos invitados a participar en el estudio; sus comentarios son importantes.

Al terminar el estudio, recibirá una tarjeta de regalo de agradecimiento por su participación.

¡Necesitamos su ayuda!

Para comenzar, siga las instrucciones en la postal que recibió por correo.



Gracias por su tiempo. Esperamos que pueda participar.

Atentamente,
South Bay Community Services

Para más información visite **sandag.org/study**
o llame gratis al: 1 (844) 468-2570

SANDAG

SAN DIEGO REGIONAL TRANSPORTATION STUDY

Help improve transportation in the San Diego region!

If you received an invitation to participate in the San Diego Regional Transportation Study, we hope you will participate. The San Diego Association of Governments (SANDAG) wants to better understand your travel needs to help prioritize future transportation improvements. **Please follow the instructions on the postcard you received in the mail to get started.**

As one of a few households chosen to participate, your input is important.

For more information, visit **sandag.org/study** or call toll-free: **1 (844) 468-2570**

SANDAG

ESTUDIO REGIONAL DE TRANSPORTE DE
SAN DIEGO

¡Ayude a mejorar el transporte en la región de San Diego!

Si usted recibió una invitación para participar en el Estudio Regional de Transporte de San Diego, nos gustaría que usted participara. La Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés), quiere entender mejor sus necesidades de viaje para así priorizar mejoras de transporte a futuro. **Para comenzar su participación, por favor siga las instrucciones en la tarjeta postal que recibió por correo.**

Como uno de los pocos hogares escogidos para participar, su opinión es importante.

Para obtener más información visite **sandag.org/study** o llame gratuitamente al **1 (844) 468-2570**.

Household Transportation Study Social Media – January 2017

When survey is released:

Facebook

SANDAG is conducting research to help shape future transportation improvements. A proportion of households across the region will receive a postcard asking for help with this study – if you receive it, we hope you'll take the time to weigh in. Your participation helps ensure that the needs of your community are accurately represented. Thank you! sandag.org/study (with image)

Twitter

Our regional transportation study is underway. Help shape future transportation improvements by participating at sandag.org/study.

Toward the end of the survey period:

Facebook

Only a few weeks left to take part in our research that will help shape future transportation improvements regionwide! If you received our invitation to participate, we hope you'll take the time to weigh in. Your participation helps ensure that the needs of your community are accurately represented. Thank you! sandag.org/study

Twitter

Only a few weeks left to take part in our research that will help shape future transportation improvements regionwide. Participate at sandag.org/study.

SANDAG Social Media Posts

CBO Social Media Posts

CVPromise Neighborhood added 2 new photos.
February 11 ·

Like Page Watch Video

Help improve transportation in your community. Look for your application in the mail. For more information contact Sandag.org/study or call toll free (844) 468-2570

Ayudar a mejorar el transporte en su comunidad. Busque su aplicación en el correo. Para más información contactar Sandag.org/study o llame gratuitamente al: (844) 468-2570

See Translation

Casa Familiar
February 16 ·

Like Page Watch Video

If you received an invitation to participate in the SANDAG Regional Transportation Study, Casa Familiar representatives may be contacting you to make sure that San Ysidro is represented!

If you have any question, please call 1-844-468-2570 or visit sandag.org/study #SANDAG

CVPromise Neighborhood

@CVPromise

- Home
- About
- Photos
- Events
- Likes
- Videos
- Instagram feed
- **Posts**

Create a Page

Like · Follow · Share · ···

Watch Video

CVPromise Neighborhood added 2 new photos.
February 11 ·

Help improve transportation in your community. Look for your application in the mail. For more information contact Sandag.org/study or call toll free (844) 468-2570

Ayudar a mejorar el transporte en su comunidad. Busque su aplicación en el correo. Para más información contactar Sandag.org/study o llame gratuitamente al: (844) 468-2570

See Translation

Community

Invite friends to like this Page

Chula Vista Promise Neighborhood brings together a collaboration of partners focused on family, education, health and co... See more

560 Likes
Clarissa Reyes Falcon and 5 other friends like this

About See All

www.cvpromise.org/

Community

Visitor Posts

South Bay Community Services
July 6, 2016 at 8:00pm

Power of community is strong in City of Chula Vista Government! Than... See More

Like · Comment

South Bay Community Services
January 22, 2016 at 11:56am

Need-based scholarships available for first year college students in... See More

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

CBO Training Frequently Asked Questions

What is the study about?

The study will explore how and why people in the San Diego region travel – in other words, where and when they travel, how they get there, and how much it costs (parking or transit fees). Once the information is collected, SANDAG will use it to get a better understanding of the transportation needs of San Diego County residents and to better plan for future transportation improvements. SANDAG completes a similar study every ten years to capture how the region and its transportation systems have grown, developed, and changed.

What is the purpose of community outreach?

SANDAG wants to ensure that residents throughout the region are aware of the survey, understand what it's about, and that invited households have the opportunity to participate. Community outreach will help increase awareness and participation. The main goal is to increase participation rates, especially among Spanish-speaking households, where participation has historically been lower. A list of addresses will be provided, and the goal is to get as many households to complete the study as possible.

Why is SANDAG partnering with Community-Based Organizations (CBO)?

CBOs are helpful partners to work with on a community level. They are familiar with their community and know first-hand the needs of their neighborhoods. Through this partnership, SANDAG can engage study invitees more effectively.

What do residents get for participating?

Households that complete the study will be offered gift cards valued at $10 to $20. Gift cards will be received about 10 days after households complete the study. The dollar amount of the gift card depends if the survey is completed through the downloadable mobile app, or if it is done via phone or online.

How do invited participants sign up and get started?

Invited households will receive an invitation letter with instructions and a unique password to begin the survey. They can sign up online at **sandag.org/study** or call 1 (844) 468-2570. (See sample invitation letter.)

When do we need to take action?

Phase 1 – January/February: SANDAG will begin mailing letters to invited households. Invitations will be sent to new addresses each week.

Phase 2 – February: Outreach to invited households in specific neighborhoods (only the addresses on the list provided) to ask if people have received the invitation and encourage participation.

Phase 3 – Late February: Follow up with the participating households to help them complete the study.

How can we track our outreach?

Tracking sheets called "outreach logs" will be provided, and they must be filled out daily and submitted weekly. These will help document when and with whom the visits are taking place, and how it's all going.

What other requirements are there?

All field staff are required to be trained using the information and materials in this training guide. They must also sign an agreement that guarantees they will neither conduct political advocacy of any kind nor use the private information (including name and address) for any other purpose. (See attached agreement.)

Are there speaking points that should be used?

When speaking to residents, we expect field staff to be courteous, respectful, engaging, and informative. Speaking points can be found in the Execution section of this Outreach Guide.

Where can we get more information?

The enclosed materials (in English and Spanish) will provide a background for the survey and specific instructions (e.g., how to sign up and install the rMove mobile app):

- Copy of invitation letter
- Project fact sheet
- Frequently Asked Questions
- Door hanger
- Flier
- Speaking points for field staff
- How to use rMove instructions

What type of action should be taken when we visit households on the list?

Residents should be given the chance to review the information about the survey and be notified that they were invited to participate. Each visit should be noted in the "Outreach Log" below. The following are scenarios that could take place, along with the recommended actions.

Scenarios

If invitee…	***Then, take the following action:***
Did not see the invitation	Provide copy of invitation letter and password and explain the study (use speaking points).
Is interested, but doesn't know what to do next	Provide instructions (e.g., how to go online or call to begin the study, how to install or use rMove).
Is not interested	Use speaking points to encourage participation…if still not interested, then thank them for their time.
Has questions	Provide more information, where possible, or provide the call center number.
Wants you to complete the survey for them	Please remind the participant that you are happy to answer questions they have regarding the study, but that it's important that they complete the surveys themselves.
Sees that the survey has already been started (or completed) using their password, but it wasn't them	Ask the respondent to email **study@sandag.org** or call 1 (844) 468-2570 and explain the situation.

Residents who are interested in participating in the survey but were not invited also could be encountered. Please instruct these residents to send an email to **study@sandag.org** or call 1 (844) 468-2570. Volunteer participants are not to be encouraged because of the way this study is designed, but should not be turned down.

Speaking Points

The discussion that takes place between the resident and CBO field staff is crucial to the success of this outreach effort. CBO field staff must be able to engage effectively with the resident, and should use the following speaking points (to be translated to Spanish):

Introduction

- It is important to have your participation in a countywide transportation survey.
- The study will gather information about how, when, and why people travel. This will help planners better understand travel needs of San Diego County residents and results will help plan future transportation improvements in the region.
- SANDAG is partnering with us (the CBO or the respective neighborhood) to help increase survey participation.
- A gift card is being offered to those that complete the study.
- Completing the study is easy, and will require your time and commitment.
- We are available to help you sign up and complete the study.
- If you need more help, you can also call 1 (844) 468-2570.

Closure

- Your participation is important to make sure that our community's transportation needs are captured.
- Participation will help to improve transportation in our community.
- Thank you for your time and consideration.
- When is a good time for us to follow-up with you to see how the survey is going?

ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

Preguntas Frecuentes

¿De qué se trata este estudio?

Este estudio explorará cómo y por qué la gente viaja en la región de San Diego. En otras palabras, cuándo viajan, a dónde van, su modo de transporte y cuánto cuesta (tarifas de tránsito o estacionamiento). SANDAG utiliza la información recopilada para entender mejor las necesidades de transporte de los residentes del Condado de San Diego, y para planificar mejoras de transporte a futuro. SANDAG realiza un estudio similar cada 10 años para recopilar información sobre el crecimiento, desarrollo y los cambios de los sistemas de transporte de la región.

¿Cuál es el propósito de la difusión comunitaria?

SANDAG quiere asegurarse que los residentes a lo largo de la región sepan sobre la encuesta, entiendan de qué se trata, y que los hogares invitados a participar tengan la oportunidad de hacerlo. La difusión comunitaria ayudará a incrementar el conocimiento de la encuesta así como los índices de participación. La meta principal es aumentar los índices de participación, especialmente entre los hogares que hablan español, donde la participación ha sido históricamente baja. Se proveerá una lista de direcciones y el objetivo será que la mayor cantidad posible de hogares completen el estudio.

¿Por qué se está asociando SANDAG con organizaciones comunitarias (CBO)?

Estas organizaciones son socios importantes a nivel comunitario. Están familiarizadas con su comunidad y conocen de primera mano las necesidades de los vecindarios. A través de esta colaboración, SANDAG podrá interactuar con los participantes más efectivamente.

¿Qué reciben los residentes por su participación?

Los hogares que completen el estudio recibirán tarjetas de regalo valuadas en $10 y $20 dólares. Recibirán las tarjetas de regalo alrededor de 10 días después de completar el estudio. La cantidad de la tarjeta de regalo dependerá si la encuesta se completó utilizando la aplicación móvil o por teléfono o en línea.

¿Cómo pueden inscribirse y comenzar los participantes invitados?

Los hogares invitados recibían una carta de invitación con instrucciones, así como una contraseña distintiva para comenzar la encuesta. Pueden inscribirse en línea en sandag.org/study o llamando al 1 (844) 468-2570 (véase la muestra de la carta de invitación)

¿Cuándo necesitamos tomar acción?

Primera fase – finales de enero: SANDAG comenzará a mandar cartas a los hogares invitados. Las invitaciones serán enviadas a direcciones cada semana.

Segunda fase – enero/febrero: habrá difusión a los hogares invitados en vecindarios específicos (solamente las direcciones en la lista proveída) para preguntar si han recibido la invitación y para animarlos a participar.

Tercera fase – mediados/finales de febrero: darle seguimiento a los hogares participantes para ayudarlos a completar el estudio.

¿Cómo podemos registrar la difusión comunitaria realizada?

Se proveerán hojas para registrar la actividad realizadas llamadas “outreach logs” en inglés. Deberán ser llenadas todos los días y entregadas semanalmente. Nos ayudarán a documentar cuándo se están llevando a cabo las visitas y con quién, y cómo va todo.

¿Qué otros requisitos hay?

Se requiere que todo el equipo de campo sea capacitado en el uso de información y materiales incluidas en esta guía. Deben también firmar un acuerdo que garantiza que no promoverán ningún tipo de punto de vista político y que tampoco utilizarán la información privada, incluyendo el nombre y las direcciones de las personas, para ningún otro motivo (véase el acuerdo adjunto).

¿Se deben utilizar puntos específicos de discusión?

Nuestra expectativa es que al interactuar con los residentes, el equipo de campo sea cortés, respetuoso, interactivo e informativo. Los puntos de discusión están disponibles en la sección de Ejecución en esta guía de difusión.

¿Dónde se puede obtener más información?

Los materiales adjuntos (en inglés y español) proveen los antecedentes y el contexto de la encuesta, así como instrucciones específicas (cómo inscribirse o instalar la aplicación móvil rMove):

- Copia de la carta de invitación
- Hoja de datos del proyecto
- Preguntas frecuentes
- Aviso para colgar en puertas
- Volantes
- Puntos de discusión para el equipo de campo
- Instrucciones para usar rMove

¿Qué tipo de acciones debemos tomar cuando visitemos los hogares en la lista?

Se le dará la oportunidad a los residentes a revisar la información sobre la encuesta, y se les notificará que están invitados a participar. Cada visita será registrada en las hojas proveídas abajo. Los siguientes son algunos escenarios que podrían llevarse a cabo, así como acciones recomendadas.

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

Project Schedule

Recruitment of CBOs	**Fall 2016**
Contracts with CBOs	**Confirm all contracts by January 9, 2017**
Initial Training	**January 17 – 19, 2017**
Training of Field Staff	**January 23 - 27, 2017**
Outreach	**January 30, 2017 (until Feb 22, 2017)**

Regional Household Transportation Study
Community Based Organization Door to Door Outreach Agreement

I, _____, affirm and represent that, as of the date of this Agreement, I am at least 18 years of age. I understand that Cook + Schmid (the "Outreach Company") is responsible for conducting door-to-door outreach for the San Diego Regional Transportation Study on behalf of the San Diego Association of Governments ("SANDAG"). I understand that I will be working through [name of CBO], which is under contract with the Outreach Company to assist with conducting the door-to-door outreach for the San Diego Regional Transportation Study (the "Project").

I agree to the following during periods of time when I am working on the Project:

I. I will not speak for or against any political matter, whether based on my own opinion or someone else's.
II. I will act in an ethical and professional manner so as to not to damage the reputations of [name of CBO], the Outreach Company, or SANDAG.
III. I will not make any negative remarks about [name of CBO], the Outreach Company, or SANDAG.
IV. I will not request or accept donations or gifts from any person.
V. With the exception of Outreach Company and SANDAG representatives, I will not release any personally identifying information that may come into my possession regarding the people or households invited to participate in the study, including but not limited to anyone's address, age, or name.
VI. I understand and agree that I am not a SANDAG employee, and will not give any indication that I am a SANDAG employee.

I understand that this Agreement is intended to be as broad and inclusive as permitted by law, and I agree that if any portion of this Agreement becomes invalid, the remainder will continue in full force and effect. I also understand that this Agreement is to be interpreted under California law.

I have read the above Agreement before signing below, and affirm that I fully understand its contents and that I am completing this Agreement freely and voluntarily.

_____
*Print Name

_____
*Street Address *City, State, and ZIP Code

☐ I represent that **I am 18** years of age, and have the right to enter into this agreement.

_____
*Signature *Date

**Required Field*

Estudio Regional de Transporte en Hogares
Acuerdo de divulgación de puerta en puerta de la organización comunitaria local

Yo, _____, afirmo y certifico que, en la fecha del presente Acuerdo, tengo al menos 18 años de edad. Entiendo que Cook + Schmid (la "Empresa Divulgadora") tiene la responsabilidad de llevar a cabo actividades de divulgación de puerta en puerta para el Estudio Regional de Transporte de San Diego en representación de la Asociación de Gobiernos de San Diego ("SANDAG"). Entiendo que estaré trabajando a través de [nombre de la organización comunitaria local], que está bajo contrato con la Empresa Divulgadora para ayudar a llevar a cabo la divulgación de puerta en puerta para el Estudio Regional de Transporte de San Diego (el "Proyecto").

Expreso mi conformidad con lo siguiente para los períodos de tiempo en que trabaje en el Proyecto:

I. No hablaré a favor o en contra de ningún asunto político, ya sea basado en mi propia opinión o en la de otra persona.
II. Actuaré de manera ética y profesional a fin de no dañar la reputación de [nombre de la organización comunitaria local], la Empresa Divulgadora o SANDAG.
III. No haré comentarios negativos sobre [nombre de la organización comunitaria local], la Empresa Divulgadora o SANDAG.
IV. No solicitaré ni aceptaré donaciones o regalos de ninguna persona.
V. A excepción de los representantes de la Empresa Divulgadora y SANDAG, no revelaré ninguna información de identificación personal que llegue a mi poder relacionada con las personas o los hogares invitados a participar en el estudio, incluidos, entre otros, datos sobre el domicilio, la edad o el nombre de las personas.
VI. Entiendo y acepto que no soy un empleado de SANDAG ni daré indicios de serlo.

Entiendo que este Acuerdo tiene el fin de ser amplio e inclusivo hasta donde la ley lo permite, y acepto que si alguna sección de este Acuerdo se invalida, el resto permanecerá en plena validez y efecto. Entiendo también que este Acuerdo se debe interpretar según la ley de California.

He leído el Acuerdo anterior antes de firmar a continuación y afirmo que entiendo el contenido totalmente y que he completado este Acuerdo de manera libre y voluntaria.

_____
*Nombre en letra de molde

_____
*Dirección *Ciudad, estado y código postal

☐ Certifico que tengo **18** años de edad y tengo derecho a celebrar este acuerdo.

_____
*Firma *Fecha

**Campo obligatorio*

SAN DIEGO REGIONAL TRANSPORTATION STUDY

Outreach Guide for Community-Based Organizations

Background/Purpose

The San Diego Association of Governments (SANDAG) is conducting the San Diego Regional Transportation Study to collect information about the travel activities and behaviors of the region's residents in order to identify transportation needs for future planning efforts.

A recent pilot survey revealed that Hispanic residents participated at a lower rate compared to other segments. To achieve a representative sample of the San Diego region's population, a concerted effort must be made to reach Hispanic households.

To address this, Cook + Schmid, consultant to RSG and SANDAG, will partner with community-based organizations (CBOs) and local non-profits to conduct outreach to Hispanic households to encourage participation. The main objective of this effort is to facilitate direct outreach to families who have been invited to participate and effectively engage survey invitees.

This outreach guide outlines the project team's roles and responsibilities, training, execution, timeline, evaluation, and FAQs.

Roles/Responsibilities

The effort to reach invited households in hard-to-reach audiences will involve SANDAG, consultants, CBOs, and their representatives.

SANDAG – SANDAG is the owner of the project. The public agency will provide the funding, resources, and information required to involve CBOs in the outreach effort. SANDAG also will provide final direction in the approach to CBO outreach.

Resource Systems Group (RSG) – As the primary consultant on the study, RSG will provide the main project details and more specific information (addresses and passwords) of the invited households.

Cook + Schmid (C+S) – As the subcontractor to RSG, C+S will serve as the liaison between SANDAG and the CBOs.

CBOs – As the local outreach resource to support this project, CBOs will directly reach invited households to inform them about the study, confirm residents' participation if possible, guide them in the process, and serve as a resource to help ensure completion of the study. These groups were selected based on areas included in the sample plan.

Study Outreach Team

Name	Organization	Title	Role
Genevieve Fong	Cook + Schmid	Account Manager	Provide day-to-day oversight of CBO outreach and facilitate execution of program
Susy Villegas	Cook + Schmid	Multicultural Outreach Specialist	Recruit, coordinate, and facilitate CBO outreach with respective CBOs

Execution

Training sessions for both CBO representatives and field staff will be conducted before any outreach efforts begin. Lists of target households (addresses and passwords) will be provided before the outreach can begin.

Target Households

After the study has launched, RSG will provide the list of specific addresses for a direct visit.

Based on the overall numbers included in the list and goal for completion rate, a specific goal for number and frequency of visits will be established for each community. C+S will evaluate the outreach logs of each CBO to monitor performance rates.

The outreach log includes the following information for field staff to complete:

- Date of visit
- Time of visit
- Results/action taken (left door hanger, provided information, etc.)
- Follow-up notes (e.g., need to visit again, call back, provide more information)

Number of Visits

Field staff will reach out to the community in two stages, with the main objective to get households to start the study. The goal of the first stage is to confirm participation of invitees. During this stage, residents will get a better understanding of the project and agree (or decline) to participate. Up to three attempted visits may be required for confirmation. Stage two will help to ensure completion of the study. Field staff will determine if there are any questions or issues about finishing the study. These visits will serve as personal reminders as well.

Speaking Points

The discussion that takes place between the resident and CBO field staff is crucial to the success of this outreach effort. CBO field staff must be able to engage effectively with the resident, and should use the following speaking points (to be translated to Spanish):

Introduction

- It is important to have your participation in a countywide transportation survey.

- The study will gather information about how, when, and why people travel. This will help planners better understand travel needs of San Diego County residents and results will help plan future transportation improvements in the region.
- SANDAG is partnering with us (the CBO or the respective neighborhood) to help increase survey participation.
- A gift card is being offered to those that complete the study.
- Completing the study is easy, and will require your time and commitment.
- We are available to help you sign up and complete the study.
- If you need more help, you can also call 1 (844) 468-2570.

Closure

- Your participation is important to make sure that our community's transportation needs are captured.
- Participation will help to improve transportation in our community.
- Thank you for your time and consideration.
- When is a good time for us to follow-up with you to see how the survey is going?

Door-to-Door Visits

While it is incumbent upon the CBO to employ field staff who are competent, engaging, and enthusiastic, the following tips and guidelines should be followed during door-to-door visits. Field staff must:

- Be courteous and respectful
- Identify themselves as representatives of the CBO
- Use the speaking points and informational materials provided
- Complete the outreach log sheets
- Make follow-up visits as-needed
- Immediately report any issues of concern
- Adhere to the non-advocacy and confidentiality agreements they signed

General Timeline

Task	Target Date	Participants
Training of CBO Representatives	January 17-19, 2017	Cook + Schmid, CBOs
Training of CBO Field Staff	January 23-27, 2017	Cook + Schmid, CBOs
Outreach	January 30 – February 22, 2017	CBOs
Monitoring	February 6 – February 28	Cook + Schmid
Close-out	March	Cook + Schmid, CBOs

Evaluation

To assess and measure the impact of CBO outreach, door-to-door visits will be monitored by having field staff complete outreach log sheets, which will provide information about location and frequency of

visits and specific actions taken. Cook + Schmid will continue to check in weekly with the CBOs during the survey run.

The outreach logs will be accompanied by a final report, which will include the following: total number of visits, total number of people reached (spoken to), total number of confirmed participants, and a list of questions/issues. Once a CBO submits these documents, Cook + Schmid can process full payment. An initial payment will be provided when work begins. Payment will be made directly to the CBO.

CBO Training FAQs

What is the study about?

The study will explore how and why people in the San Diego region travel – in other words, where and when they travel, how they get there, and how much it costs (parking or transit fees). Once the information is collected, SANDAG will use it to get a better understanding of the transportation needs of San Diego County residents and to better plan for future transportation improvements. SANDAG completes a similar study every ten years to capture how the region and its transportation systems have grown, developed, and changed.

What is the purpose of community outreach?

SANDAG wants to ensure that residents throughout the region are aware of the survey, understand what it's about, and that invited households have the opportunity to participate. Community outreach will help increase awareness and participation. The main goal is to increase participation rates, especially among Spanish-speaking households, where participation has historically been lower. A list of addresses will be provided, and the goal is to get as many households to complete the study as possible.

Why is SANDAG partnering with Community-Based Organizations (CBO)?

CBOs are helpful partners to work with on a community level. They are familiar with their community and know first-hand the needs of their neighborhoods. Through this partnership, SANDAG can engage study invitees more effectively.

What do residents get for participating?

Households that complete the study will be offered gift cards valued at $10 to $20. Gift cards will be received about 10 days after households complete the study. The dollar amount of the gift card depends if the survey is completed through the downloadable mobile app, or if it is done via phone or online.

How do invited participants sign up and get started?

Invited households will receive an invitation letter with instructions and a unique password to begin the survey. They can sign up online at **sandag.org/study** or call 1 (844) 468-2570. (See sample invitation letter.)

When do we need to take action?

Phase 1 – January/February: SANDAG will begin mailing letters to invited households. Invitations will be sent to new addresses each week.

Phase 2 – February: Outreach to invited households in specific neighborhoods (only the addresses on the list provided) to ask if people have received the invitation and encourage participation.

Phase 3 – Late February: Follow up with the participating households to help them complete the study.

How can we track our outreach?

Tracking sheets called "outreach logs" will be provided, and they must be filled out daily and submitted weekly. These will help document when and with whom the visits are taking place, and how it's all going.

What other requirements are there?

All field staff are required to be trained using the information and materials in this training guide. They must also sign an agreement that guarantees they will neither conduct political advocacy of any kind nor use the private information (including name and address) for any other purpose. (See attached agreement.)

Are there speaking points that should be used?

When speaking to residents, we expect field staff to be courteous, respectful, engaging, and informative. Speaking points can be found in the Execution section of this Outreach Guide.

Where can we get more information?

The enclosed materials (in English and Spanish) will provide a background for the survey and specific instructions (e.g., how to sign up and install the rMove mobile app):

- Copy of invitation letter
- Project fact sheet
- Frequently Asked Questions
- Door hanger
- Flier
- Speaking points for field staff
- How to use rMove instructions

What type of action should be taken when we visit households on the list?

Residents should be given the chance to review the information about the survey and be notified that they were invited to participate. Each visit should be noted in the "Outreach Log" below. The following are scenarios that could take place, along with the recommended actions.

If invitee…	***Then, take the following action:***
Did not see the invitation	Provide copy of invitation letter and password and explain the study (use speaking points).

Is interested, but doesn't know what to do next	Provide instructions (e.g., how to go online or call to begin the study, how to install or use rMove).
Is not interested	Use speaking points to encourage participation…if still not interested, then thank them for their time.
Has questions	Provide more information, where possible, or provide the call center number.
Wants you to complete the survey for them	Please remind the participant that you are happy to answer questions they have regarding the study, but that it's important that they complete the surveys themselves.
Sees that the survey has already been started (or completed) using their password, but it wasn't them	Ask the respondent to email **study@sandag.org** or call 1 (844) 468-2570 and explain the situation.

Residents who are interested in participating in the survey but were not invited also could be encountered. Please instruct these residents to send an email to **study@sandag.org** or call 1 (844) 468-2570. Volunteer participants are not to be encouraged because of the way this study is designed, but should not be turned down.

ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

Escenarios

Si el residente…	***Entonces, hay que hacer lo siguiente***
No vio la invitación	Proveer una copia de la invitación y contraseña, y explicarle de qué se trata el estudio utilizando los puntos de discusión.
Está interesado, pero no sabe qué hacer	Proveer instrucciones (ir en línea o llamar para comenzar el estudio, cómo instalar o utilizar rMove).
No está interesado	Utilizar puntos de discusión para motivar a que participe… Si no está interesado, entonces dar gracias por su tiempo.
Tiene preguntas	Proveer más información, hasta donde sea posible, o proveer el número telefónico del centro de llamadas.
Quiere que usted lo ayude a completar el estudio	Recordarle al participante que usted está disponible para contestar sus preguntas sobre el estudio, pero que es importante que ellos completen el estudio ellos mismos.
Ve que el estudio ha sido comenzado, o completado, utilizando su contraseña, pero no fueron ellos quienes lo hicieron	Solicite al participante que se comunique por correo electrónico a study@sandag.org o llamando al 1 (844) 468-2570 y que explique la situación.
Tiene un letrero de “No Soliciting” en su hogar	Por favor no visite esta dirección. Haga nota en la hoja de registro, y prosiga a la siguiente dirección.

Se podrían dar casos en donde hay residentes que no fueron invitados a participar pero que están interesados en la encuesta. Por favor comuníquele a estos residentes que manden un correo electrónico a study@sandag.org o que llamen al 1 (844) 468-2570. No hay que animar a las personas que deseen participar voluntariamente al estudio debido a la forma en que el estudio está diseñado. Sin embargo, no hay que decirles que no.

Difusión para organizaciones comunitarias
Puntos de discusión

Los temas de discusión entre un residente y el equipo de campo de una organización comunitaria (CBO) son cruciales para el éxito de este esfuerzo. El equipo de campo de la organización debe tener la capacidad de comunicarse efectivamente con el residente, y utilizar los siguientes puntos de discusión:

Introducción:

- Es importante que usted participe en esta encuesta de todo el Condado de San Diego.
- El estudio busca capturar información sobre cómo, cuándo y por qué la gente viaja. Esto ayudará a los planeadores a entender mejor las necesidades de viaje de los residentes del Condado de San Diego. Los resultados ayudarán en la planificación de mejoras al sistema de transporte en el futuro.
- La Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés), se ha unido con nosotros [la organización comunitaria o vecindario] para incrementar la participación en la encuesta.
- Se ofrece una tarjeta de regalo a las personas que completen el estudio.
- Completar el estudio es fácil; requerirá de su tiempo y compromiso.
- Estamos disponibles para ayudarlo a inscribirse en el estudio y completarlo.
- Si necesita más información también puede llamar al 1(844) 468-2570.

Para cerrar:

- Su participación es importante para asegurarse que las necesidades de nuestra comunidad han sido registradas.
- Su participación ayudará a mejorar el transporte en nuestra comunidad.
- Gracias por su tiempo y su consideración.
- ¿Cuándo podemos darle seguimiento con usted para ver cómo va su participación con la encuesta?

SANDAG | SAN DIEGO REGIONAL TRANSPORTATION STUDY

FINAL REPORT

COMMUNITY-BASED ORGANIZATION OUTREACH

Organization Name:_____

Contact Name:_____ **Phone Number**:_____

Address:_____ **Email Address**:_____

_____

Date Range for Outreach:_____

Total Number of Field Staff Participating:_____

Total Number of Households Attempted:_____

Total Number of Households Confirmed to Participate:_____

Total Number of Households Confirmed as Not Interested:_____

Any concerns/issues:_____

_____

_____

_____

_____

Recommendations to improve outreach for this project:_____

_____

_____

_____

_____

SAN DIEGO REGIONAL TRANSPORTATION STUDY
FACT SHEET

The San Diego Regional Transportation Study is an effort by the San Diego Association of Governments (SANDAG) to collect detailed information about travel activities and behaviors of local residents. This information is vital for state and local planning agencies to understand how our transportation system is coping with growth, development, and other changes across the region.

Schedule

SANDAG and Resource Systems Group (RSG), a consultant to SANDAG, began the study in spring 2016 with a small pilot. The results of the pilot study will be used to improve the design and effectiveness of a larger study to take place in fall 2016.

The Need

Last completed in 2006, this study is designed to provide a picture of transportation patterns across the region, which helps SANDAG understand local transportation needs and plan for future improvements. The study will aggregate data, such as when and where people travel; whether they drive alone, carpool or vanpool, walk, bike, or use public transit; and how much their travel activity costs.

Methods

Households across the San Diego region will be randomly selected to participate in order to provide a sample that reflects the varied demographics and travel behaviors around the region. More than 200,000 households in San Diego County will be invited to participate in the fall 2016 study, representing approximately 1 in 5 households in the region.

Most participants in the study will use a smartphone app (rMove) to answer questions about their daily travel behavior. Participants that do not own smartphones may complete the study online or on the phone.

Each household using their rMove smartphone app is assigned a seven-day period to participate, while households completing the study by phone or online are asked to participate and log travel behavior for one day.

For More Information

To learn more about the San Diego Regional Transportation Study, visit sandag.org/study or contact Project Manager Darlanne Hoctor Mulmat at (619) 699-7326 or Darlanne.Mulmat@sandag.org

SANDAG

401 B Street, Suite 800
San Diego, CA 92101
(619) 699-1900
Fax (619) 699-1905
sandag.org

SANDAGregion

@SANDAG

SANDAGregion

SAN DIEGO REGIONAL TRANSPORTATION STUDY

August 2016

3883

ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

HOJA INFORMATIVA

El Estudio Regional de Transporte de San Diego es una iniciativa de la Asociación de Gobiernos de San Diego (SANDAG, por sus siglas en inglés) para obtener información detallada sobre las actividades y patrones de viaje de los residentes locales. La información es de vital importancia para las agencias estatales y locales de planeación que buscan entender cómo se está adaptando el sistema de transporte al crecimiento, desarrollo y otros cambios en toda la región.

Calendario

SANDAG y Resource Systems Group (RSG), una compañía que asesora a SANDAG, comenzó el estudio en la primavera de 2016 con un pequeño estudio piloto. El resultado de este estudio se utilizará para mejorar el diseño y la efectividad de un estudio más grande que se llevará a cabo en otoño de 2016.

Las necesidades

El estudio, que se llevó a cabo por última vez en 2006, está diseñado para proveer un panorama de los patrones de transporte de toda la región para que SANDAG entienda mejor las necesidades locales de transporte y así pueda planear mejoras a futuro. El estudio reunirá todos los datos, incluyendo cuándo y dónde viaja la gente, si manejan solos, comparten el viaje en automóvil o camioneta, caminan o utilizan la bicicleta o el transporte público; y el costo de sus viajes.

Metodología

Se seleccionarán hogares al azar en toda la región de San Diego para obtener una muestra que refleje la demografía variada y los comportamientos de viaje de la región. Se extenderá una invitación a más de 200,000 hogares en el Condado de San Diego para que participen en el estudio del otoño de 2016. Esto representa aproximadamente alrededor de uno de cada cinco hogares de la región.

La mayoría de los participantes del estudio utilizarán una aplicación para teléfonos inteligentes (smartphones) llamada rMove, en donde podrán contestar preguntas sobre sus comportamientos diarios de viaje. Los participantes que no cuenten con un teléfono inteligente podrán completar el estudio en línea o por teléfono.

Cada hogar que participe utilizando la aplicación rMove para teléfonos inteligentes será asignado un período de siete días para participar. Por su parte, los hogares que respondan el estudio por teléfono o en línea registrarán sus datos y patrones de viaje por un período de un día.

Para obtener más información

Para conocer más sobre el Estudio Regional de Transporte de San Diego visite sandag.org/study o contacte a la gerente del proyecto Darlanne Hoctor Mulmat al (619) 699-7326 o Darlanne.Mulmat@sandag.org

SANDAG

401 B Street, Suite 800
San Diego, CA 92101
(619) 699-1900
Fax (619) 699-1905
sandag.org

SANDAGregion

@SANDAG

SANDAGregion

ESTUDIO REGIONAL DE TRANSPORTE DE
SAN DIEGO

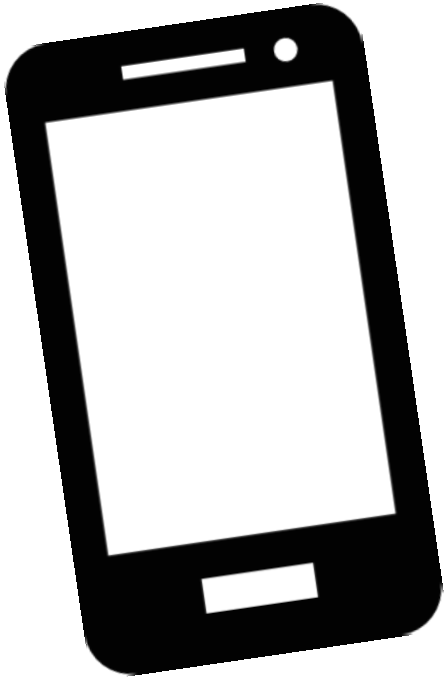
Agosto de 2016

3883

SANDAG | ESTUDIO REGIONAL DE TRANSPORTE DE SAN DIEGO

$20/

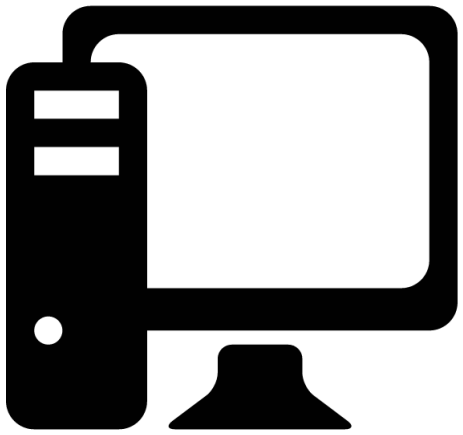
=



$10/

=

OR



APPENDIX D. WEIGHTING MEMO

This page intentionally left blank.

MEMO

TO: Darlanne Hoctor Mulmat, SANDAG
FROM: RSG
DATE: Originally sent June 21, 2017. Revised August 31, 2017.
SUBJECT: Weighting of the San Diego Regional Transportation Study Data—Revised

TABLE OF CONTENTS

WEIGHTING THE SANDAG HOUSEHOLD TRAVEL SURVEY DATA

OVERALL WEIGHTING PROCEDURE

Survey data weighting involves three primary steps:

1. Calculating initial expansion weights to expand the sample to represent the study area population.
2. Adjusting the initial weights to meet marginal population distributions of key household and person-level sociodemographic measures.
   - RSG originally intended to use American Community Survey (ACS) tabular data to establish the household and person-level targets; however, the weighting work identified inconsistencies with the ACS published tables between the household- and person-level data.
   - RSG revised the weighting approach to instead use Public Use Microdata Sample (PUMS) data to achieve a similar—but more consistent—set of weights.
3. Calculating trip (and travel day) adjustment factors to account for known reporting biases associated with certain (or any) data collection methods.

The memo concludes with recommendations for future work and data adjustments.

INITIAL EXPANSION WEIGHTS

All residential addresses within each sampling strata (described in the study sampling plan) have an equal probability of being invited to the study, but there are differing invitation rates between the strata to account for targeted oversampling (e.g., high walk and bike shares, high-/low-income, zero-vehicle shares) and to account for "compensatory oversampling" where we expect response rates to be low. Each stratum includes separately calculated expansion weights to account for the differences between the probabilities of being invited in each of the various strata. Dividing the number of households present within the stratum (using the most recent ACS data) by the number of households in the final survey sample living within the same stratum produces the initial expansion weight for each sampling stratum.

Table 1 (copied from the sampling plan document) shows the four sampling strata used for the study:

- **Transportation oversample**, which has the highest invitation rate (four times as high as the "general population" rate).
- **Hispanic, Spanish, and Low-income oversample** (invitation rate 2.5 times as high as the "general population" rate).
- **Other oversample**, which includes a mix of areas near military bases and universities, and other areas with a high fraction of young nonfamily households (invitation rate twice as high as the "general population" rate).
- **Regular sample**, which includes Downtown San Diego and all other block groups (BGs) (the "general population").

TABLE 1: SPECIFICATION OF SAMPLING STRATA AND OVERSAMPLE RATES (FROM SAMPLING PLAN)

	REGION	DEFINITION OR MEASURE USED TO IDENTIFY THE POPULATION	PERCENTILE CUTOFF FOR OVERSAMPLE	BEHAVIOR THRESHOLD	OVERSAMPLE RATE (RELATIVE TO GEN. POP.)
TRANSPORTATION OVERSAMPLE	Bicycle Commuters	% of workers in BG with commute mode = bike	95% (90 BGs)	4.5% or higher	4.0x
	Walk or Bike Commuters	% of workers in BG with commute mode = bike or walk	95% (90 BGs)	13.0% or higher	4.0x
	Transit Commuters	% of workers in BG with commute mode = public transit	95% (90 BGs)	12.1% or higher	4.0x
	Zero-Vehicle HHs	% of HHs in BG with no vehicles available	95% (90 BGs)	22.1% or higher	4.0x
HISPANIC, SPANISH, & LOW-INCOME OVERSAMPLE	Hispanic Ethnicity HHs	% of HHs in BG of Hispanic ethnicity	90% (180 BGs)	71.4% or higher	2.5x
	Spanish-speaking HHs	% of HHs in BG speaking Spanish (regardless of whether they speak English)	90% (180 BGs)	59.5% or higher	2.5x
	Low-Income HHs	% of HHs in BG with annual income <$25K per year	90% (180 BGs)	37.6% or higher	2.5x
OTHER OVERSAMPLE	Active Duty Military	% of population age 16 or older in BG who are active military	97.5% (45 BGs)	9.6% or higher	2.0x
	College student enrollment	% of population in BG enrolled in higher education	95% (90 BGs)	19.7% or higher	2.0x
	Young, nonfamily HHs	% of HHs with age of householder under 35 and is a nonfamily HH	95% (90 BGs)	36.2% or higher	2.0x
	Downtown San Diego	Defined as a 15 BG region	15 BGs	N/A	1.0x
	General Population	All other BGs	N/A	N/A	1.0x

The ACS 2011–15 five-year data tables provided an estimate of the number of households in each BG. Aggregating across BGs within each sampling stratum produced the numbers shown in the third column of Table 2, adding to 1,094,157 households in the region. RSG coded the survey respondents' reported addresses to BGs and sampling strata to produce the sample distribution across the strata shown in the fourth column of Table 2. (The weighting included a total of 6,139 completed households that completed at least one weekday for all household members.) Dividing the number of households from ACS by the sample size in each stratum produced the initial expansion weights in the fifth column of Table 2. The initial weight for the "regular" sample is about 255, while the initial weights for all the oversample strata are lower, as one would expect.

If response rates were the same in the Transportation oversample stratum as in the Regular sample, then one would expect to have four times as many households in the sample relative to the actual population, because the invitation rate was four times as high. One would also expect the initial expansion factor for the Transportation oversample to be only one-fourth as high as for the Regular sample. However, (255.6816 / (4 * 77.0297)) equals 0.83, which means that the response rate within the Transportation oversample invitees was approximately 83% as high as the response rate among the Regular sample invitees. Results of similar calculations, provided in the last column of Table 2, show that the response rate in the other oversample was approximately 94% as high as in the Regular sample, while the response rate in the Hispanic and low-income oversample was only 48% as high as for the Regular sample. (This group was oversampled primarily because of their anticipated low response rate, which turned out to be the case.)

TABLE 2: RESULTS OF INITIAL EXPANSION WITHIN SAMPLING STRATA

SAMPLE SEGMENT	OVERSAMPLE RATE	ACS 2011-15 HOUSEHOLDS	COMPLETE HOUSEHOLDS IN SAMPLE	INITIAL EXPANSION WEIGHT	RESPONSE RATE RELATIVE TO REGULAR SAMPLE
Regular sample	1x	754,772	2,952	255.6816	100%
Transportation oversample	4x	171,083	2,221	77.0297	83%
Hispanic oversample	2.5x	103,561	490	211.3490	48%
Other oversample	2x	64,741	476	136.0105	94%
	Total	**1,094,157**	**6,139**		

The ACS 2011–15 five-year estimates are an average of surveys performed over five years. The ACS 2015 one-year data offer more up-to-date estimates; however, these data are not available at the BG level. The 2015 one-year estimate for the total number of households in the county is 1,113,610, which is 1.8% higher than 2011–15 five-year estimate of 1,094,157. To match the more up-to-date target for total households, RSG adjusted the initial expansion weights upwards by the same factor to arrive at the correct total number of households when expanded, as shown in the last column of Table 3.

TABLE 3: ADJUSTMENT OF INITIAL EXPANSION WEIGHTS TO 2015 ONE-YEAR ACS ESTIMATES

SAMPLE SEGMENT	INITIAL EXPANSION WEIGHT	ADJUSTED INITIAL WEIGHT	COMPLETE HOUSEHOLDS	INITIAL EXPANDED HOUSEHOLDS
Regular sample	255.6816	260.2273	2,952	768,191
Transport. oversample	77.0297	78.3992	2,221	174,125
Hispanic oversample	211.3490	215.1065	490	105,402
Other oversample	136.0105	138.4286	476	65,892
		Total	**6,139**	**1,113,610**

ADJUSTMENT OF WEIGHTS TO MATCH DEMOGRAPHIC TARGETS

Using the initial expansion factors shown in Table 3, the expanded sample matched the total number of households for the study region (San Diego County) and for each sampling stratum. If there were no nonresponse biases in survey recruitment and completion, then the initial expansion weights would be accurate enough to obtain a representative weighted sample. However, inevitable biases and the inherent randomness of sampling necessitated further adjustment of the expansion weights.

To understand the required adjustments, the initial expanded sample was compared against the following demographic "target" dimensions at the county level:

- Public Use Microdata Areas (PUMAs) (22 Census-defined areas within the county, each with 100,000 or more people).
- Household size (1, 2, 3, 4, 5+).
- Household number of workers (0, 1, 2, 3+).
- Household income group (0–30K, 30–60K, 60–100K, 100–150K, over 150K, in 2015 dollars).
- Household vehicle ownership (0, 1, 2, 3, 4+).
- Household age of head of household (under 35, 35–64, 65 plus).
- Person gender.
- Person age group (0–4, 5–15, 16–17, 18–24, 25–49, 50–64, 65+).
- Person employment status (full-time worker (35+hr/week), part-time worker, nonworker).
- Person ethnicity (Hispanic, non-Hispanic).
- Person student status (university student, not university student).

The sample did not include a target for student status for school types other than university, since the controls on the younger age groups (0–4, 5–15, 16–17) will already give a good estimate of students in the K–12 grades; the university student target is intended to split the older age groups into students and nonstudents. The Hispanic and university student targets are important as these groups are often under-represented in household travel survey samples.

Also note that the survey data for the previous year's income will be in 2015 or 2016 dollars, which aligns with the ACS categories (based on 2015 dollars). The income categories used in the SANDAG model are based on 2010 dollars. The inflation from 2010 to 2015 was approximately 7.5%. This change is not high enough to shift many households from one category to another, so RSG decided to use the same categories

as used in the 2010 model, with breakpoints at $30k, $60k, $100k, and $150k. Using any other categorization at this point (after data collection) would be difficult, since those are also the key breakpoints used in the survey questions. The categories and inflation year used for weighting do not necessarily need to match the model, but matching would simplify the model calibration. **For these reasons, RSG recommends that SANDAG retain the same income segmentation but switch to using 2015 dollars when updating and recalibrating their model.**

IMPUTATION PROCESSES

Each survey household and person record must be classified along the same dimensions (as listed above) to reweight the households and persons to match the ACS-based targets. This is a straightforward process, except for two variables that have missing values in the survey data—household income and person ethnicity. The following sections describe this imputation process. (The imputation and creation of household lists was done in SPSS using the script "Imputation and weighting list creation_3.sps", which was later recoded to R and provided to SANDAG.)

Imputing Income

To impute income, RSG estimated an ordered logit model to predict the "hhincome_broad" variable in the survey. As shown in Table 4, this variable has the same five income categories that are used for weighting. A total of 613 households were missing data, so the model was estimated using data from the other 5,586 households.

TABLE 4: RESPONSES USED TO ESTIMATE INCOME IMPUTATION MODEL

	RESPONSES	FREQUENCY	PERCENT (%)	VALID PERCENT (%)
Valid	Under $30,000	1,019	16.4%	18.2
	$30,000–$59,999	1,176	19.0%	21.1
	$60,000–$99,999	1,385	22.3%	24.8
	$100,000–$149,999	1,095	17.7%	19.6
	$150,000 or more	911	14.7%	16.3
	Total	**5,586**	**90.1%**	**100%**
Missing	Prefer not to answer	613	9.9%	--
	Total	**6,199**	**100.0%**	--

Table 5 presents the ordered logit model estimates. The main contributors of income are the number of workers, with those with higher education levels and working full-time contributing more than lower education or part-time workers. More workers with "professional occupations" (codes 11–19, 23, and 29) also add income. The more adults of Hispanic ethnicity in the household, the lower the income tends to be. All else equal, a higher number of nonworking adults is related to higher income (perhaps indicating that those adults do not need to work because there is already adequate income from other workers). Younger

households (head of household under age 35) tend to have lower incomes. Those who own their residences and live in single-family detached residences are more likely to have higher incomes. Finally, the model includes neighborhood effects, using the fraction of residence BG households in different income groups. The signs are as expected—as more "neighbors" are in the high-income categories, the households also tend to be in high-income categories. This clustering effect is by far the strongest for the highest income group of $200k or more. The fit of the ordered logit model, in terms of McFadden pseudo R-squared, is 0.359, which is good for disaggregate models.

TABLE 5: ORDERED LOGIT MODEL ESTIMATES TO PREDICT INCOME CATEGORIES

INDEPENDENT VARIABLES	ESTIMATE	T-STAT
# Full-time workers w/graduate degrees	2.351	29.79
# Full-time workers w/bachelor's degrees	1.944	26.59
# Full-time workers w/no college degree	1.209	18.89
# Part-time workers w/graduate degrees	1.041	8.54
# Part-time workers w/bachelor's degrees	0.558	5.20
# Part-time workers w/no college degree	0.134	1.54
# Workers with professional occupations	0.818	15.43
# Hispanic household members	-0.301	-6.66
# Nonworking adults age 18+	0.498	10.06
# Children under 18	0.023	0.65
Head of household is under age 35	-0.397	-5.38
Head of household is age 65 or older	0.119	1.63
Household owns its residence	1.006	15.77
Household lives in a single-family detached	0.301	4.83
Fraction HH in BG with incomes $0–$15k	-1.543	-4.31
Fraction HH in BG with incomes $15k–$30k	-1.666	-4.46
Fraction HH in BG with incomes $30k–$45k	-0.635	-1.51
Fraction HH in BG with incomes $45k–$60k	-0.745	-1.68
Fraction HH in BG with incomes $125k–$150k	0.649	1.08
Fraction HH in BG with incomes $150k–$200k	0.898	1.58
Fraction HH in BG with incomes > $200k	4.064	10.10
CATEGORY THRESHOLDS		
Threshold at $30k	0.260	1.34
Threshold at $60k	1.927	9.91
Threshold at $100k	3.660	18.38

Threshold at $150k	5.430	26.06

In addition to estimating the model, SPSS writes out the predicted response probabilities and the highest probability category to each household's data record. Table 6 shows that the model predicts the actual response category as the highest probability category more often than the other categories, particularly for the extreme (high and low) income groups. Also, the distribution of predicted responses for the "prefer not to answer" group mirrors the total distribution, with a slight skew toward the upper-income categories (which is typical for missing income). As a result, for the 613 households who did not answer either the detailed or follow-up income question, the model's highest probability response category is used as the imputed income for weighting purposes.

TABLE 6: HIGHEST PROBABILITY RESPONSE CATEGORY VS. ACTUAL RESPONSE CATEGORY

ACTUAL RESPONSE CATEGORY	PREDICTED RESPONSE CATEGORY				
	UNDER $30,000	$30,000–$59,999	$60,000–$99,999	$100,000–$149,999	$150,000 OR MORE
Under $30,000	61%	27.5%	11%	0.5%	--
$30,000–$59,999	21.2%	38.1%	35.5%	4.3%	0.9%
$60,000–$99,999	4.4%	22.6%	50.5%	17.5%	5.1%
$100,000–$149,999	1.6%	9.8%	36.5%	28.5%	23.6%
$150,000 or more	0.8%	3%	18.8%	24.6%	52.9%
Prefer not to answer	10.1%	22.3%	34.9%	16%	16.6%
Total	**16.4%**	**21.2%**	**32.5%**	**15%**	**14.9%**

Imputing Hispanic Ethnicity

Ethnicity was asked of all respondents age 16+. Of those that responded, approximately 1,300 of 9,900, (or 13%) reported Hispanic ethnicity. A further 596 adults preferred not to respond, so imputation was required in these cases. Table 7 indicates that the ACS-based percentage of Hispanic persons living in the residence BG is a strong indicator—for those who reported being Hispanic, 44% of the people living in their BGs are Hispanic, on average, versus 24% for people who reported being non-Hispanic.

TABLE 7: AVERAGE RESIDENCE BG % HISPANIC RESIDENTS VS. ETHNICITY RESPONSE

ETHNICITY RESPONSE	PERSONS	BG AVG. % HISPANIC
Child (not asked)	1,755	29.5%
Non-Hispanic	8,598	24%
Hispanic	1,288	43.5%
Prefer not to respond	596	22.4%
Total	**12,237**	**26.8%**

Table 8 shows the estimates for a binary logit model to predict whether an adult respondent reported Hispanic ethnicity. As expected, the most significant variable (other than the constant term) is the fraction of BG residents that are Hispanic, according to ACS. Other variables that increase the likelihood of reporting Hispanic ethnicity are lower education, younger households, more children in the household, and lower incomes. The McFadden pseudo R-squared is 0.164, which is lower than for the income imputation model.

TABLE 8: BINARY LOGIT MODEL ESTIMATES TO PREDICT HISPANIC ETHNICITY

INDEPENDENT VARIABLE	ESTIMATE	T-STATISTIC
Constant—Hispanic	-2.851	30.14
Residence BG fraction Hispanic residents	2.600	19.23
No high school diploma	1.887	11.44
High school but no college degree	0.469	6.10
Graduate school college degree	-0.163	1.69
Head of household under age 35	0.431	4.55
Head of household age 65 plus	-1.137	8.36
Number of children in the household	0.249	7.16
Household owns its residence	-0.363	4.94
Household income less than 30K	0.114	1.13
Household income 30-60K	0.272	3.20
Household income 150K plus	-0.296	2.66

Table 9 shows that if the model uses the highest probability response category, then only 3% of all respondents are predicted to be Hispanic. This is much lower than the actual percentage in the data, so the highest probability category is too skewed in this case to be used for imputation. Instead, RSG used a stochastic Monte Carlo procedure for imputation, drawing a random uniform number between 0 and 1 for each person, and imputing that the person is Hispanic if the random number is less than that person's modeled probability of being Hispanic. The results of the Monte Carlo imputation are shown in Table 10. The model imputed 11.4% of the adults who did not respond to be Hispanic, which is like the overall fraction of 12.6%. It is also necessary to impute ethnicity for children under 16 who were not asked to report ethnicity. In this case, a simple rule applied: if 50% or more of the adults in the household reported Hispanic ethnicity, then the children under 16 in the household were also designated as Hispanic; otherwise, these children were designated as non-Hispanic.

TABLE 9: HIGHEST PROBABILITY RESPONSE CATEGORY VS. ACTUAL RESPONSE CATEGORY

ACTUAL RESPONSE	NON-HISPANIC	HISPANIC
Non-Hispanic	98.8%	1.2%
Hispanic	84.3%	15.7%
Prefer not to respond	98.3%	1.7%
Total	**97.0%**	**3.0%**

TABLE 10: RANDOM MONTE CARLO RESPONSE CATEGORY VS. ACTUAL RESPONSE CATEGORY

ACTUAL RESPONSE	NON-HISPANIC	HISPANIC
Non-Hispanic	89.3%	10.7%
Hispanic	74.3%	25.7%
Prefer not to respond	88.6%	11.4%
Total	**87.4%**	**12.6%**

CREATING ACS-BASED EXPANSION TARGETS

The original weighting plan for this study intended to use ACS 2011–15 five-year block-level and tract-level tables, aggregated up to PUMA level, to create the marginal targets for reweighting. This strategy raises the issue that there have been changes in the population over the period 2011 to 2015, so the 5-year data can be somewhat out of date. Table 11 and Table 12 show the San Diego County-level regional ACS values for each of the household-level and person-level marginal targets (and the ACS table and field numbers used to calculate the targets).[1] Unemployment levels dropped significantly over that period, so the targets for 2 and 3+ worker households and higher income households are approximately 7% higher in the 2015 one-year data compared to the 2011–15 five-year data, while the targets for the zero-worker households and the lowest income households are 3% to 6% lower. Car ownership levels also are higher in the 2015 one-year data, and the number of households with head age 65+ grew by almost 7%. Similarly, the person targets show the largest differences for workers (over 5%) and persons age 65+ (over 8%). Also noteworthy is that the number of persons in group quarters is 4% lower in the 2015 one-year data, possibly due to the closing or downsizing of military bases during the period. The significant differences between the five-year and one-year data favored use of the more recent 2015 one-year ACS estimates. But because of ACS sample sizes, those estimates are only made available for areas with over 60,000 people; PUMAs have over 60,000 people, so the one-year estimates are available at the PUMA level and could be used for setting targets.

[1] The names used for each weighting target (e.g., h_total, h_size1, etc.) are used throughout this memo—especially the tables and figures—and in the scripts used to perform this weighting process. The names are designed to clearly signal the type and content of target (h = household-level target, p = person-level target).

TABLE 11: DIFFERENCE IN REGION-LEVEL HOUSEHOLD MARGINAL TARGETS BETWEEN FIVE-YEAR AND ONE-YEAR ACS

MARGINAL TARGET	ACS 2011–15 FIVE-YEAR DATA	ACS 2015 ONE-YEAR DATA	DIFFERENCE	ACS TABLE AND FIELD NUMBERS
h_total	1,094,157	1,113,610	1.78%	B11016, 1
HOUSEHOLD SIZE				
h_size1	267,512	276,876	3.50%	B11016, 10
h_size2	357,596	364,009	1.79%	B11016, 3 + 11
h_size3	183,620	179,895	-2.03%	B11016, 4 + 12
h_size4	158,696	161,422	1.72%	B11016, 5 + 13
h_size5plus	126,733	131,408	3.69%	B11016, 6-8 + 14-16
HOUSEHOLD WORKERS				
h_0workers	259,053	251,092	-3.07%	B08202, 2
h_1worker	431,491	431,409	-0.02%	B08202, 3
h_2workers	320,921	343,390	7.00%	B08202, 4
h_3plusworkers	82,692	87,719	6.08%	B08202, 5
HOUSEHOLD INCOME				
h_income0_30K	250,189	235,989	-5.68%	B19001, 2-6
h_income30_60K	263,894	261,807	-0.79%	B19001, 7-11
h_income60_100K	245,317	258,646	5.43%	B19001, 12-13
h_income100_150K	173,540	185,856	7.10%	B19001, 14-15
h_income150Kplus	161,217	171,312	6.26%	B19001, 16-17
HOUSEHOLD VEHICLES				
h_0cars	66,452	64,671	-2.68%	B25044, 3 + 10
h_1car	348,331	357,068	2.51%	B25044, 4 + 11
h_2cars	434,916	439,122	0.97%	B25044, 5 + 12
h_3cars	166,258	172,214	3.58%	B25044, 6 + 13
h_4pluscars	78,200	80,535	2.99%	B25044, 7-8 + 14-15
AGE OF HEAD OF HH				
h_head_under35	241,035	242,234	0.50%	B25007, 3-4 + 13-14
h_head_35_64	625,328	627,888	0.41%	B25007, 5-8 + 15-18
h_head_65plus	227,794	243,488	6.89%	B25007, 9-11+19-21

However, two other issues exist when using ACS household-level and person-level tables to derive the expansion targets. One issue is that nearly all the ACS person-level tables include group quarters residents, but group-quarters addresses were not part of the survey sample frame, so those individuals should not be included in the targets. It is possible to derive person-level targets that exclude group quarters residents by going through the time-intensive process of downloading the ACS one-year Public Use Microdata Sample (PUMS), analyzing the records to derive separate marginals for group quarters residents by PUMA, and then subtracting those from the ACS table-based marginals to derive nongroup quarters targets. That was done for this project, and the ACS-based distributions for group quarters for group quarters can be provided to SANDAG (RSG did not end up using these results, but they may still be of some interest to SANDAG).

TABLE 12: DIFFERENCE IN PERSON MARGINAL TARGETS BETWEEN 5-YEAR AND 1-YEAR ACS

MARGINAL TARGET	ACS 2011–15 FIVE-YEAR DATA	ACS 2015 1-YEAR DATA	DIFFERENCE	ACS TABLE AND FIELD NUMBERS
p_total	3,223,096	3,299,521	2.37%	B01001, 1
p_groupquarters	88,981	85,294	-4.14%	B09019, 38
p_households	3,134,115	3,214,227	2.56%	Subtraction from total
GENDER				
p_male	1,618,945	1,657,609	2.39%	B01001, 2
p_female	1,604,151	1,641,912	2.35%	B01001, 26
AGE GROUP				
p_age_0_4	210,874	215,063	1.99%	B01001, 3 + 27
p_age_5_14	394,489	393,851	-0.16%	B01001, 4-5 + 28-29
p_age_15_17	122,111	119,124	-2.45%	B01001, 6 + 30
p_age_18_24	367,188	362,018	-1.41%	B01001, 7-10 + 31-34
p_age_25_49	1,150,368	1,178,658	2.46%	B01001, 11-15 + 35-39
p_age_50_64	580,392	599,108	3.22%	B01001, 16-19 + 40-43
p_age_65plus	397,674	431,699	8.56%	B01001, 20-25 + 44-49
WORKER STATUS				
p_worker	1,537,795	1,619,707	5.33%	B23025, 4 + 6
p_non_worker	1,685,301	1,679,814	-0.33%	Subtraction from total
ETHNICITY				
p_hispanic	1,060,995	1,102,256	3.89%	B03002, 12
p_not_hispanic	2,162,101	2,197,265	1.63%	B03002, 2
STUDENT STATUS				
p_univ_stud	293,463	298,746	1.80%	B14001, 8-9
p_not_univstud	2,929,633	3,000,775	2.43%	Subtraction from total

The major issue associated with using the ACS tables with targets at both the person level and household level is the apparent inconsistencies between the person-level tables and the household-level tables. These inconsistencies make it nearly impossible to match both using a consistent set of household-level weights. These inconsistencies are present in both the 2011–15 five-year tables and the 2015 one-year tables, as shown in Table 13. The first rows in Table 13 show the number of regional households in the size 1, 2, 3, 4 and 5+ categories, and the number of persons in those households. As was already shown in Table 11 and Table 12, there are 1.78% more households in the 2015 one-year data than the 2011–15 five-year data, but 2.56% more persons in those households. The number of persons grows more than the number of households because the average number of persons per HH is 2.886 in the 2015 data versus 2.864 in the 2011–15 data. Further analysis shows that the average household size for households with 1–4 persons is lower in the 2015 data (2.241 vs. 2.230), and that the entire increase in average household size is due to the 5+ person category, where the average persons per household increases from 7.620 in the 2011–15 data to 7.792 in the 2015 data.

These average household sizes appeared high, so RSG compared them to the average household size for 5+ person households in the survey and in the ACS PUMS microdata. In the survey, the average size of such households is 5.40 persons, and there are only a few surveyed households with more than seven people. In the PUMS microdata, when weighting by the PUMS household weight, the average size of 5+ person households is 5.68 in the 2011–15 data and 5.69 in the 2015 one-year data. These values are much closer to the survey value of 5.4 than they are to the ACS table-based values of 7.62 and 7.79. The final rows in the table compute the difference in the target total number of persons from using the PUMS-based average household size for 5+ person households versus using the values from the ACS person-level tables. For the 2015 data, using an average household size of 5.69 rather than 7.79 for the 131,408 5+ person HH is a difference of 276,248 people, which is 8.6% of the total household population of 3,214,227 from the ACS person tables.

TABLE 13: INCONSISTENCIES IN HOUSEHOLD-LEVEL AND PERSON-LEVEL ACS-BASED ESTIMATES

	2011–15 FIVE-YEAR ACS			2015 ONE-YEAR ACS		
	HOUSEHOLDS	PERSONS	PERCENTAGE OF HH	HOUSEHOLDS	PERSONS	PERCENTAGE OF HH
1 person HH	267,512	267,512	24.4%	276,876	276,876	24.9%
2 person HH	357,596	715,192	32.7%	364,009	728,018	32.7%
3 person HH	183,620	550,860	16.8%	179,895	539,685	16.2%
4 person HH	158,696	634,784	14.5%	161,422	645,688	14.5%
5+ person HH	126,733	965,767	11.6%	131,408	1,023,960	11.8%
Total HH and persons in HH	1,094,157	3,134,115	100.0%	1,113,610	3,214,227	100.0%
Difference between five-year and one-year totals	--	--	--	1.78%	2.56%	--
Persons/HH total	--	2.864	--	--	2.886	--
Persons/HH in size 1–4	--	2.241	--	--	2.230	--
Persons/HH in size 5+	--	7.620	--	--	7.792	--
Persons/HH in size 5+ in the SANDAG survey	--	5.40	--	--	5.40	--
Persons/HH in size 5+ in the weighted PUMS data	--	5.68	--	--	5.69	--
Expected persons in size 5+ based on PUMS persons/HH	--	719,843	--	--	747,712	--
Difference from persons in size 5+ from ACS tables	--	245,924	--	--	276,248	--
Difference as % of total persons in households	--	7.8%	--	--	8.6%	--

The conclusion from the above analysis is that the number of persons in the ACS person-level tables is approximately 8–9% too high compared to the values derived from analyzing the PUMS microdata using the ACS household weights. Yet, analyzing the same PUMS microdata using the ACS person-level weights provides values that are almost identical to those in the ACS person-level tables. The implication is that the US Census Bureau uses different information when deriving the person-level weights than when deriving the household-level weights—presumably trying to match some estimates of population from other data sources. No matter what the cause, the fact that the ACS household-based and person-based published tabular estimates are inconsistent with each other makes them unsuitable for a weighting procedure designed to derive a single set of household-level weights that can match both household-level and person-level expansion targets.

The alternative to using the published tabular estimates is to download the PUMS household and person records, screen out the records for vacant units and group quarters, and then weight and sum the data to derive household- and person-level targets at the PUMA level (which is the finest level of geography provided for the PUMS data). To keep the targets consistent and avoid inconsistencies, RSG used the household weight in creating both the household-level and person-level targets. In addition to avoiding the inconsistency in household and person weights, this approach has two further advantages. First, using the microdata allows more flexibility in creating the targets than is provided by the published ACS tables. For example, the ACS published tables do not have a definition of "full-time" versus "part-time" workers that is consistent what is collected in the survey or what SANDAG uses in modeling. Using the PUMS microdata, on the other hand, RSG can use the "hours worked per week" variable to classify the records into full time and part time.

Second, this approach is consistent with how the ACS and PUMS data are used to generate the synthetic population for the SANDAG activity-based model. That process also uses PUMS data in a list-based weighting process to match both household-level and person-level targets and also uses the ACS household-level weights (but not the ACS person-level weights). The possible limitation posed by using the PUMS data to create targets is that the targets must use PUMA geography, or some aggregation of PUMA geography. This study planned to use the PUMA geographies in weighting from the outset, so this was not a limitation in this case. RSG created the targets for the weighting using the 2015 one-year PUMS data for San Diego County. After screening out vacant units and group quarters records, there were 10,618 household records, which weight up to 1,113,610 HHs (agreeing with Table 13). In the corresponding person file, there were 27,771 nongroup quarters person records. Using the household weight, these records summed to 2,952,543 persons.

Reweighting the Survey Households to the Expansion Targets

The reweighting was done using list-based iterative proportional fitting (IPF), programmed in Pascal (RSG later translated this code into R and provided the scripts to SANDAG). List-based IPF is like conventional IPF used in weighting, but it allows for both person-level and household-level weighting variables to be included in a single list at the household level, with the amount that each household contributes toward each target. Before the reweighting, it is often useful to look at how far off the weighted sample using the initial expansion weights is from the expansion targets. The initial expansion weights already adjust for oversampling, so discrepancies between the initial weighted sample and the targets are mainly due to differences in response rates across different demographic and geographic groups. Table 14 indicates that response rates were highest in the central city PUMAs (7316, 7314, 7315), and in the Poway (7308) and Mira

Mesa (2312) PUMAs. Response rates were lowest in the eastern-most PUMAs (7302, 7318, 7319), and the southern-most PUMAs (7320, 7321, 7322) and the Escondido area (7305, 7306).

The differences in response rates by PUMA may be related to differences in demographics across the areas. Table 15 shows that response rates were lowest among larger households (particularly 5+ people, 3+ workers, and 4+ cars), among low-income households, and among young household with head age under 35. The highest response rates were among one-person households, zero-worker households, and older households, and, to a lesser extent, among higher-income households. These are typical nonresponse biases found in most recent household travel surveys, and are mainly due to nonresponse in the initial address-based recruitment rather than to nonresponse in the travel data collection phase of the survey.

Table 16 shows the differences for the person-level target variables. (Because the sample is biased toward smaller households, the initial weighted sample is 22% low for total persons.) Compared to this, there are even larger discrepancies for Hispanics, university students, and all age groups under 25. The only group significantly above the target are people age 65 and older. Table 17 shows the full set of targets by PUMA used in the weighting process, while Table 18 shows the number of unweighted observations toward each target in each PUMA. The red cells show the lowest values, and in Table 18 some PUMAs have few households in certain categories, such as 5+ persons, 3+ workers, 0 cars, 4+ cars and age 16–17. The lowest value is two households, for the zero-car target in PUMA 7320. All other cells have three or more households. Finally, Table 19 shows the initial difference between the initial weighted sample and each target in each PUMA. This table shows the same discrepancies as in Table 15 and

Table 16, but here they are for each combination of target and PUMA, rather than at the regional level.

The weighting program constrains the IPF procedure in two important ways. First, only small adjustments in the weights are allowed in the initial iterations, as the procedure first starts cycling through the weighting targets. This constraint prevents any single weighting target from having too much influence on the weights relative to the others, and tends to slow the progress of the weights toward extremely high or extremely low values. Second, there is a minimum and maximum weight constraint on each household, which is specified as a factor of the initial expansion weight. Initially, RSG kept each PUMA separate in the weighting and constrained the final weights to be no higher than four times the initial expansion weight and no lower than 0.25 times the initial expansion weight. The results of this run are shown in Table 20. For PUMAs 7304, 7310, 7312, 7314, 7315, and 7316, all the targets are matched within a few percentage points, while for other PUMAs, there are still large discrepancies. These discrepancies could be solved by eliminating any constraints on the weight values, but that would cause extreme weights in certain cells where there are few households and large discrepancies. Rather than allowing extreme weights, best practice is to combine areas to reduce the effect of small cell sample sizes.

TABLE 14: INITIAL WEIGHTED SAMPLE VS. EXPANSION TARGETS, BY PUMA

PUMA	PUMA Name	Initial Weighted Sample	PUMA-Level Targets	Initial Expansion vs. Targets
7301	NW/Oceanside	51,393	63,700	-19.32%
7302	N&E/Fallbrook, Alpine	29,950	43,272	-30.79%
7303	NW/Vista City	27,914	32,330	-13.66%
7304	NW/Carlsbad	50,653	46,716	8.43%
7305	NW/S. Marcos, Escondido	36,597	42,742	-14.38%
7306	NW/Escondido City	33,672	42,647	-21.04%
7307	C/Lakeside, Ramona	34,264	38,145	-10.17%
7308	C/R. Bernardo, Poway	57,767	45,335	27.42%
7309	W/Encinitas	67,323	62,857	7.11%
7310	W/Central Coast	75,398	71,125	6.01%
7311	WC/Del Mar Mesa	44,926	40,539	10.82%
7312	C/Mira Mesa, Univ. Hts	53,262	42,428	25.54%
7313	C/El Cajon, Santee	58,650	58,670	-0.03%
7314	C/Navajo, La Mesa	79,105	58,870	34.37%
7315	WC/Clairemont, Kearny	73,836	63,043	17.12%
7316	C/Centre City, Balboa	125,836	80,928	55.49%
7317	C/Central, Mid-City	60,188	58,728	2.49%
7318	SE/Encanto, Skyline	21,639	42,575	-49.17%
7319	SC/Lemon Grove	32,443	41,854	-22.49%
7320	SW/Sweetwater	35,682	43,718	-18.38%
7321	SW/Chula Vista	42,170	53,365	-20.98%
7322	S/Otay Mesa, S. Bay	20,941	40,023	-47.68%
	Total	**1,113,610**	**1,113,610**	**0.00%**

TABLE 15: INITIAL WEIGHTED REGIONAL SAMPLE VS. EXPANSION TARGETS, BY HOUSEHOLD TARGET

Household Targets	Initial Weighted Sample	Regional Total Targets	Initial Expansion vs. Targets
h_total	1,113,610	1,113,610	0.00%
h_size1	403,102	273,088	47.61%
h_size2	440,920	360,865	22.18%
h_size3	125,327	185,775	-32.54%
h_size4	102,823	161,214	-36.22%
h_size5plus	41,434	132,668	-68.77%
h_0workers	346,174	234,864	47.39%
h_1worker	445,616	424,850	4.89%
h_2workers	290,980	359,334	-19.02%
h_3plusworkers	30,839	94,562	-67.39%
h_income0_30K	164,767	233,697	-29.50%
h_income30_60K	232,140	261,431	-11.20%
h_income60_100K	294,135	256,494	14.68%
h_income100_150K	227,009	192,527	17.91%
h_income150Kplus	195,557	169,461	15.40%
h_0cars	60,336	63,887	-5.56%
h_1car	431,723	357,766	20.67%
h_2cars	443,430	436,404	1.61%
h_3cars	127,605	177,901	-28.27%
h_4pluscars	50,517	77,652	-34.94%
h_head_under35	166,644	240,640	-30.75%
h_head_35_64	628,260	627,219	0.17%
h_head_65plus	318,704	245,751	29.69%

TABLE 16: INITIAL WEIGHTED REGIONAL SAMPLE VS. EXPANSION TARGETS, BY PERSON TARGET

Person Targets	Initial Weighted Sample	Regional Targets	Initial Expansion vs. Targets
p_inhouseholds	2,296,428	2,952,543	-22.22%
p_male	1,098,360	1,439,676	-23.71%
p_female	1,198,065	1,512,867	-20.81%
p_age_0_4	105,619	177,829	-40.61%
p_age_5_15	248,095	419,875	-40.91%
p_age_16_17	37,059	79,647	-53.47%
p_age_18_24	87,659	270,308	-67.57%
p_age_25_49	763,249	1,046,153	-27.04%
p_age_50_64	555,786	560,367	-0.82%
p_age_65plus	498,960	398,364	25.25%
p_ftworker	865,211	1,120,057	-22.75%
p_ptworker	261,987	340,659	-23.09%
p_nonworker	1,169,227	1,491,827	-21.62%
p_hispanic	325,960	978,541	-66.69%
p_not_hispanic	1,970,468	1,974,002	-0.18%
p_univstud	131,471	243,713	-46.05%
p_notunivstud	2,164,955	2,708,830	-20.08%

TABLE 17: PUMS-BASED TARGETS FOR EACH PUMA AND TARGET VARIABLE

Area	7301	7302	7303	7304	7305	7306	7307	7308	7309	7310	7311	7312	7313	7314	7315	7316	7317	7318	7319	7320	7321	7322
h_total	63700	43272	32330	46716	42742	42647	38145	45335	62857	71125	40539	42428	58670	58870	63043	80928	58728	42575	41854	43718	53365	40023
h_size1	16681	10464	6717	9281	10205	7240	6481	9072	13405	26080	6331	9779	12301	16356	20091	37228	17611	5544	8439	5439	12877	5466
h_size2	20006	15704	9357	18465	13895	14269	14129	16134	22171	25909	13556	16328	17472	19732	19671	28264	19329	9460	12258	11435	13633	9688
h_size3	10044	7583	4074	10504	8474	7057	6271	6981	10890	7455	8732	6922	9074	11311	10768	7403	8013	8849	7518	11117	8653	8082
h_size4	9050	5080	4914	5162	5146	6467	6063	8445	11368	7837	8021	6400	9181	7552	8032	5335	7299	8409	7426	7920	8876	7231
h_size5plus	7919	4441	7268	3304	5022	7614	5201	4703	5023	3844	3899	2999	10642	3919	4481	2698	6476	10313	6213	7807	9326	9556
h_0workers	13092	14891	5302	12205	10468	8342	8636	10869	13559	15963	5693	7801	13417	13100	12910	14720	13133	6921	9189	6205	13058	5390
h_1worker	26328	14372	10880	16885	12889	16200	11692	14065	24513	29757	14752	16372	21254	23881	24431	40024	24213	17531	13916	13720	20953	16222
h_2workers	19673	10844	11855	13472	16140	11531	14428	16733	21626	22091	16646	14073	17058	18834	20233	24211	15895	12330	15105	18730	13926	13900
h_3plusworkers	4607	3165	4293	4154	3245	6574	3389	3668	3159	3314	3448	4182	6941	3055	5469	1973	5487	5793	3644	5063	5428	4511
h_income0_30K	16017	11048	5668	5049	10587	9780	5841	4768	9084	12578	3018	8135	13207	10518	12410	21895	21534	11032	8359	5747	17099	10323
h_income30_60K	16499	9782	7766	7119	9455	11569	11051	8117	9053	14162	5772	9044	15713	12398	14616	20142	16569	14151	10953	8200	16570	12730
h_income60_100K	13475	8980	9030	10898	9573	10094	9454	10353	9799	19490	6461	9978	14268	17400	15151	17865	10312	9359	9622	12097	12317	10518
h_income100_150K	11294	7103	6265	9968	7359	6149	6528	9581	14876	10433	8319	9383	10637	10690	11056	11548	6215	5399	8695	11411	5164	4454
h_income150Kplus	6415	6359	3601	13682	5768	5055	5271	12516	20045	14462	16969	5888	4845	7864	9810	9478	4098	2634	4225	6263	2215	1998
h_0cars	2885	2294	763	1173	3060	2519	1534	1989	2993	3761	843	2409	3696	2173	3313	9934	5011	3057	2251	1264	4565	2400
h_1car	21186	11573	8334	12687	11476	12695	8599	12011	16854	30117	8930	17691	18793	19154	23813	38206	25107	12047	9023	8453	19901	11116
h_2cars	25754	16908	12230	21502	17456	16285	15177	20641	28128	26585	18722	15597	21771	26542	23037	26695	19556	15171	15959	19933	17944	14811
h_3cars	9938	8421	6869	7978	8453	6913	7351	7169	11342	8215	8618	4367	10703	8023	8572	4574	6523	7569	9802	10022	8175	8304
h_4pluscars	3937	4076	4134	3376	2297	4235	5484	3525	3540	2447	3426	2364	3707	2978	4308	1519	2531	4731	4819	4046	2780	3392
h_headu35	16416	5542	7153	5508	6039	8319	5967	5366	9672	19288	5036	17762	12400	12295	16381	29014	17119	9419	5866	7365	10132	8581
h_head3564	33095	22387	19444	27707	24516	24368	22955	27476	38420	34521	28328	17943	34068	31302	34087	40478	31687	24811	24547	30582	29486	25011
h_headо65	14189	15343	5733	13501	12187	9960	9223	12493	14765	17316	7175	6723	12202	15273	12575	11436	9922	8345	11441	5771	13747	6431
p_total	167810	110141	99454	116084	112194	127415	106824	123302	162431	152718	113186	105189	170225	141187	148747	152150	148008	145480	122152	136907	157135	133804
p_male	84928	55241	50168	55445	50832	65423	52973	57058	77705	76044	57043	49174	87794	67681	75028	77593	66750	68459	61002	67084	74756	61495
p_female	82882	54900	49286	60639	61362	61992	53851	66244	84726	76674	56143	56015	82431	73506	73719	74557	81258	77021	61150	69823	82379	72309
p_age0-4	12032	6852	7142	4869	6925	9819	4266	8058	9006	7270	4854	5433	12495	7626	8188	8977	9742	10030	5367	8505	9311	11062
p_age5-15	24746	14445	17779	16604	16628	17368	19333	18037	26769	16706	17116	10777	27548	17337	14554	8921	20390	25209	19662	23422	25595	20929
p_age16-17	4592	3177	2767	3144	3434	3337	3745	2520	4692	3057	5179	1903	4658	3150	2948	2176	2910	4742	4048	4679	4703	4086
p_age18-24	17078	8424	9412	8580	9779	12654	7374	6494	8090	12169	7278	17467	17060	10770	15211	9364	20511	17799	10128	13907	15449	15310
p_age25-49	56201	31159	35148	36123	35764	44901	32985	37972	54537	60897	38637	45237	55673	51945	62088	77943	52858	46874	41034	52215	50210	45752
p_age50-64	32771	23552	15866	24296	22284	23072	24246	29077	33772	26747	26891	13659	32827	27971	25539	28361	26976	25544	22874	21915	29373	22754
p_age65plus	20390	22532	11340	22468	17380	16264	14875	21144	25565	25872	13231	10713	19964	22388	20219	16408	14621	15282	19039	12264	22494	13911
p_ftworker	64644	36001	39058	44932	42902	45513	40511	45968	62982	63173	47875	43404	56594	55639	65437	75556	52887	46194	42055	53325	52393	43014
p_ptworker	16602	10275	11126	12160	13026	16405	10877	13557	15304	21862	11631	15455	20923	15486	18514	19250	20893	16619	14702	13823	16288	15881
p_nonworker	86564	63865	49270	58992	56266	65497	55436	63777	84145	67683	53680	46330	92708	70062	64796	57344	74228	82667	65395	69759	88454	74909
p_hispanic	57868	29683	46745	14287	38231	60713	22677	20697	14003	19477	9220	17432	45183	25963	35025	53574	57786	79410	53550	67665	112519	96833
p_nothispanic	109942	80458	52709	101797	73963	66702	84147	102605	148428	133241	103966	87757	125042	115224	113722	98576	90222	66070	68602	69242	44616	36971
p_univstudent	12795	4508	7848	6271	7589	8494	6770	8329	8406	12237	7171	21395	12087	15877	13493	13620	18936	11973	11053	13628	9959	11274
p_not_univstud	155015	105633	91606	109813	104605	118921	100054	114973	154025	140481	106015	83794	158138	125310	135254	138530	129072	133507	111099	123279	147176	122530

TABLE 18: NUMBER OF (UNWEIGHTED) SURVEY OBSERVATIONS FOR EACH PUMA AND TARGET VARIABLE

Area	7301	7302	7303	7304	7305	7306	7307	7308	7309	7310	7311	7312	7313	7314	7315	7316	7317	7318	7319	7320	7321	7322
h_total	251	122	114	228	163	147	139	255	323	587	195	357	264	377	429	1076	366	107	156	142	226	115
h_size1	96	37	37	69	62	44	45	75	102	265	41	139	97	143	206	629	170	34	47	28	83	40
h_size2	95	59	46	103	59	62	63	95	131	230	74	141	109	148	155	360	132	32	73	57	78	30
h_size3	24	7	12	31	21	19	18	39	46	43	40	42	33	40	34	54	34	17	15	20	20	16
h_size4	26	13	11	14	15	17	8	39	31	34	34	24	20	33	27	19	24	9	11	28	31	18
h_size5plus	10	6	8	11	6	5	5	7	13	15	6	11	5	13	7	14	6	15	10	9	14	11
h_0workers	90	58	37	76	65	43	45	90	93	177	36	84	107	130	135	291	113	35	53	32	81	42
h_1worker	103	36	35	90	52	59	54	79	128	255	75	162	86	143	178	532	154	43	65	68	93	37
h_2workers	53	25	38	55	42	39	37	78	98	143	78	104	61	94	104	236	93	22	34	33	49	32
h_3plusworkers	5	3	4	7	4	6	3	8	4	12	6	7	10	10	12	17	6	7	4	9	3	4
h_income0_30K	40	19	14	21	30	32	23	19	19	65	10	46	70	48	68	249	111	34	27	11	79	36
h_income30_60K	71	26	30	37	43	27	32	41	41	97	20	77	68	92	101	223	83	33	28	23	69	41
h_income60_100K	71	43	40	60	41	34	32	61	88	176	42	87	51	98	119	265	84	22	59	39	55	19
h_income100_150	45	19	14	55	28	29	32	56	81	120	52	85	51	89	79	182	43	15	31	46	13	15
h_income150Kplus	24	15	16	55	21	25	20	78	94	129	71	62	24	50	62	157	45	3	11	23	10	4
h_0cars	9	4	4	7	4	6	5	7	4	32	3	27	26	15	17	195	39	14	10	2	33	19
h_1car	91	30	41	81	65	55	46	77	112	269	54	184	103	155	210	559	179	38	47	43	90	48
h_2cars	118	52	48	99	69	53	60	117	157	211	91	112	86	145	155	280	107	31	72	63	71	33
h_3cars	26	23	15	32	18	24	20	37	36	56	36	27	33	51	28	34	29	15	15	25	22	12
h_4pluscars	7	13	6	9	7	9	8	17	14	19	11	7	16	11	19	8	12	9	12	9	10	3
h_headu35	35	17	15	16	18	18	14	25	36	105	23	117	27	42	88	285	67	17	16	15	48	27
h_head3564	126	50	70	129	100	90	77	136	196	295	138	164	143	206	229	579	220	60	96	93	119	59
h_headoo65	90	55	29	83	45	39	48	94	91	187	34	76	94	129	112	212	79	30	44	34	59	29
p_total	515	261	253	485	335	319	283	575	693	1066	476	701	520	761	763	1657	663	275	337	369	500	282
p_male	237	129	127	230	160	147	132	287	335	529	230	354	226	350	361	862	317	114	160	176	230	130
p_female	278	132	126	255	175	172	151	288	358	537	246	347	294	411	402	795	346	161	177	193	270	152
p_age0-4	34	16	13	22	19	14	9	19	45	34	33	39	19	38	27	37	29	7	13	14	28	22
p_age5-15	55	18	26	52	27	35	26	87	84	84	75	66	43	85	50	54	50	37	44	71	77	47
p_age16-17	3	4	7	8	9	10	5	12	9	9	12	7	10	9	6	6	7	15	3	9	11	4
p_age18-24	16	9	14	11	9	10	7	17	21	30	15	56	24	29	32	59	32	19	11	20	26	15
p_age25-49	152	59	76	130	105	87	85	167	204	398	146	331	139	246	291	831	270	95	92	124	159	97
p_age50-64	117	67	72	124	95	102	80	130	186	227	137	92	140	168	193	393	168	48	94	66	108	49
p_age65plus	138	88	45	138	71	61	71	143	144	284	58	110	145	186	164	277	107	54	80	65	91	48
p_ftworker	179	73	95	158	113	109	105	204	254	450	179	327	181	282	338	855	283	77	117	131	149	84
p_ptworker	42	22	29	64	37	46	33	55	82	130	70	66	59	81	86	214	77	34	30	35	52	33
p_nonworker	294	166	129	263	185	164	145	316	357	486	227	308	280	398	339	588	303	164	190	203	299	165
p_hispanic	79	23	32	31	33	49	25	30	54	68	28	60	44	77	87	259	111	111	48	114	236	161
p_nothispanic	436	238	221	454	302	270	258	545	639	998	448	641	476	684	676	1398	552	164	289	255	264	121
p_univstudent	31	15	11	13	15	15	10	25	24	59	17	90	37	39	59	131	50	22	16	26	26	18
p_not_univstud	484	246	242	472	320	304	273	550	669	1007	459	611	483	722	704	1526	613	253	321	343	474	264

TABLE 19: DEVIATIONS FROM TARGETS USING INITIAL EXPANSION WEIGHTS ONLY

Area	7301	7302	7303	7304	7305	7306	7307	7308	7309	7310	7311	7312	7313	7314	7315	7316	7317	7318	7319	7320	7321	7322
h_total	-19%	-31%	-14%	8%	-14%	-21%	-10%	27%	7%	6%	11%	26%	0%	34%	17%	55%	2%	-49%	-22%	-18%	-21%	-48%
h_size1	17%	-14%	40%	53%	38%	38%	70%	69%	42%	24%	46%	95%	63%	80%	66%	81%	50%	17%	10%	28%	13%	27%
h_size2	0%	-7%	21%	25%	-4%	-2%	10%	39%	25%	17%	26%	28%	45%	53%	38%	65%	21%	-25%	27%	25%	10%	-39%
h_size3	-50%	-79%	-28%	-34%	-52%	-30%	-25%	29%	-6%	-17%	11%	3%	-21%	-21%	-40%	-5%	-39%	-59%	-63%	-54%	-58%	-62%
h_size4	-41%	-37%	-47%	-33%	-28%	-41%	-69%	9%	-39%	-43%	-3%	-42%	-44%	4%	-36%	-37%	-35%	-82%	-66%	-13%	-31%	-54%
h_size5plus	-81%	-67%	-76%	-13%	-71%	-88%	-78%	-61%	-36%	-46%	-69%	-17%	-91%	-32%	-63%	-41%	-91%	-72%	-64%	-70%	-69%	-81%
h_0workers	43%	-7%	78%	39%	40%	13%	28%	74%	42%	39%	45%	57%	69%	114%	74%	122%	48%	-4%	15%	30%	3%	36%
h_1worker	-21%	-37%	-24%	16%	-5%	-17%	13%	31%	6%	12%	18%	49%	-10%	20%	26%	52%	4%	-50%	2%	26%	-15%	-59%
h_2workers	-45%	-42%	-22%	-7%	-45%	-19%	-35%	10%	-2%	-18%	7%	10%	-15%	6%	-12%	23%	-8%	-60%	-53%	-57%	-27%	-53%
h_3plusworkers	-77%	-77%	-79%	-61%	-74%	-76%	-82%	-43%	-73%	-46%	-55%	-72%	-66%	-19%	-49%	14%	-82%	-76%	-86%	-57%	-88%	-90%
h_income0_30K	-58%	-62%	-38%	-21%	-41%	-34%	-7%	-31%	-66%	-37%	-20%	-31%	-2%	-10%	-10%	10%	-25%	-54%	-43%	-50%	-21%	-44%
h_income30_60K	-10%	-36%	-4%	10%	3%	-50%	-27%	-4%	-18%	-14%	-19%	12%	-5%	54%	11%	38%	-21%	-52%	-42%	-33%	-23%	-42%
h_income60_100K	11%	18%	7%	27%	-3%	-23%	-20%	39%	89%	18%	47%	23%	-14%	16%	34%	83%	36%	-42%	32%	-17%	-10%	-64%
h_income100_150K	-17%	-30%	-48%	26%	-12%	16%	21%	43%	20%	46%	36%	51%	17%	77%	35%	85%	37%	-32%	-27%	-1%	-51%	-32%
h_income150Kplus	-13%	-39%	12%	-10%	-17%	29%	-1%	49%	2%	18%	0%	89%	25%	45%	14%	110%	103%	-72%	-45%	-4%	1%	-55%
h_0cars	-38%	-61%	36%	-7%	-75%	-63%	-15%	-72%	-90%	-11%	-29%	21%	20%	43%	-30%	83%	7%	-43%	-25%	-62%	8%	4%
h_1car	-17%	-38%	22%	30%	26%	-3%	31%	40%	25%	13%	43%	44%	15%	63%	46%	68%	12%	-38%	3%	27%	-17%	-26%
h_2cars	-4%	-23%	-7%	10%	-10%	-24%	-3%	35%	24%	8%	8%	24%	-5%	16%	20%	42%	-3%	-54%	1%	-19%	-20%	-51%
h_3cars	-45%	-31%	-44%	-9%	-53%	-16%	-35%	19%	-30%	-14%	-2%	4%	-25%	43%	-33%	-10%	-20%	-56%	-66%	-38%	-49%	-69%
h_4pluscars	-54%	-26%	-64%	-36%	-25%	-49%	-62%	15%	-16%	-7%	-16%	-61%	7%	-18%	-19%	-10%	4%	-55%	-58%	-48%	-18%	-85%
h_headu35	-63%	-24%	-51%	-48%	-39%	-53%	-42%	17%	-24%	-32%	4%	-20%	-59%	-30%	-17%	11%	-44%	-69%	-45%	-49%	-10%	-47%
h_head3564	-20%	-43%	-12%	4%	-8%	-16%	-18%	16%	7%	11%	13%	43%	-3%	36%	19%	69%	17%	-50%	-16%	-23%	-23%	-54%
h_heado65	33%	-15%	26%	40%	-14%	-8%	31%	58%	28%	38%	6%	99%	69%	83%	56%	121%	36%	-23%	-24%	46%	-26%	-25%
p_total	-38%	-42%	-39%	-4%	-33%	-43%	-35%	8%	-8%	-8%	-3%	4%	-31%	15%	-8%	33%	-26%	-62%	-42%	-32%	-39%	-62%
p_male	-43%	-43%	-40%	-5%	-29%	-48%	-39%	17%	-7%	-10%	-6%	12%	-41%	12%	-13%	34%	-22%	-66%	-43%	-34%	-41%	-64%
p_female	-33%	-41%	-38%	-3%	-36%	-37%	-31%	1%	-9%	-7%	0%	-2%	-19%	18%	-3%	33%	-28%	-59%	-40%	-30%	-38%	-61%
p_age0-4	-57%	-42%	-66%	6%	-39%	-68%	-49%	-41%	16%	-27%	43%	10%	-66%	6%	-31%	-40%	-48%	-87%	-40%	-57%	-41%	-66%
p_age5-15	-56%	-69%	-64%	-25%	-60%	-57%	-66%	14%	-27%	-33%	-1%	15%	-64%	11%	-29%	-10%	-59%	-78%	-48%	-23%	-41%	-62%
p_age16-17	-83%	-70%	-36%	-40%	-45%	-36%	-70%	9%	-54%	-69%	-40%	-43%	-47%	-37%	-59%	-55%	-58%	-41%	-85%	-54%	-56%	-78%
p_age18-24	-81%	-76%	-65%	-75%	-79%	-82%	-80%	-37%	-45%	-62%	-49%	-57%	-67%	-41%	-63%	-25%	-78%	-79%	-82%	-67%	-67%	-85%
p_age25-49	-47%	-53%	-49%	-18%	-34%	-56%	-37%	6%	-19%	-16%	-12%	2%	-45%	-1%	-22%	26%	-21%	-59%	-51%	-40%	-38%	-61%
p_age50-64	-24%	-27%	14%	16%	-6%	3%	-18%	4%	13%	11%	19%	19%	-1%	24%	38%	73%	12%	-61%	-16%	-24%	-32%	-60%
p_age65plus	42%	-8%	-4%	41%	-7%	-10%	19%	47%	22%	42%	-2%	90%	63%	81%	47%	110%	30%	-21%	-16%	34%	-26%	-38%
p_ftworker	-42%	-49%	-42%	-23%	-43%	-43%	-37%	6%	-13%	-7%	-15%	12%	-25%	4%	-11%	35%	-15%	-64%	-41%	-39%	-44%	-63%
p_ptworker	-51%	-49%	-37%	23%	-35%	-34%	-24%	-5%	7%	-23%	44%	-30%	-36%	19%	-10%	40%	-39%	-60%	-64%	-39%	-31%	-64%
p_nonworker	-33%	-37%	-37%	4%	-25%	-44%	-36%	13%	-6%	-4%	-3%	9%	-33%	23%	-5%	29%	-29%	-62%	-37%	-26%	-37%	-61%
p_hispanic	-77%	-82%	-84%	-52%	-83%	-83%	-74%	-66%	-13%	-50%	-37%	-53%	-77%	-37%	-55%	-40%	-70%	-73%	-81%	-57%	-59%	-71%
p_nothispanic	-18%	-27%	1%	2%	-7%	-6%	-24%	23%	-7%	-2%	0%	16%	-14%	27%	6%	74%	3%	-49%	-11%	-8%	11%	-39%
p_univstudent	-50%	-17%	-66%	-55%	-53%	-60%	-64%	-31%	-47%	-27%	-43%	-45%	-38%	-49%	-20%	9%	-58%	-62%	-69%	-53%	-49%	-74%
p_not_univstud	-37%	-43%	-37%	-1%	-31%	-41%	-33%	11%	-6%	-7%	0%	17%	-30%	23%	-7%	36%	-21%	-62%	-39%	-30%	-38%	-61%

TABLE 20: DEVIATIONS FROM TARGETS AFTER REWEIGHTING, KEEPING ALL PUMAS SEPARATE AND USING MAXIMUM WEIGHT OF FOUR TIMES (4X) INITIAL WEIGHT

Area	7301	7302	7303	7304	7305	7306	7307	7308	7309	7310	7311	7312	7313	7314	7315	7316	7317	7318	7319	7320	7321	7322
Min.Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Max.Ratio	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
h_total	0%	-1%	-1%	0%	0%	-1%	0%	0%	0%	0%	0%	0%	-1%	0%	0%	0%	0%	-2%	-1%	0%	0%	-1%
h_size1	3%	5%	2%	0%	1%	11%	2%	2%	0%	0%	1%	1%	15%	0%	0%	0%	8%	8%	4%	1%	1%	8%
h_size2	4%	5%	4%	0%	1%	10%	2%	0%	0%	0%	1%	0%	13%	0%	0%	0%	7%	7%	6%	3%	1%	7%
h_size3	3%	-25%	3%	0%	1%	10%	3%	0%	0%	0%	0%	0%	12%	0%	0%	0%	7%	4%	-1%	-2%	0%	6%
h_size4	3%	5%	1%	0%	2%	10%	-1%	-1%	0%	0%	-1%	-1%	12%	0%	0%	0%	8%	-27%	-15%	1%	0%	6%
h_size5plus	-26%	-1%	-12%	0%	-11%	-51%	-14%	-1%	0%	0%	-2%	0%	-63%	0%	0%	0%	-63%	0%	-4%	-4%	-4%	-26%
h_0workers	0%	-4%	6%	0%	5%	1%	3%	-3%	-1%	0%	-3%	0%	3%	0%	-1%	1%	6%	7%	-3%	0%	-1%	9%
h_1worker	4%	-2%	0%	0%	4%	7%	2%	-4%	0%	0%	1%	0%	1%	0%	0%	0%	4%	-3%	12%	9%	8%	6%
h_2workers	-2%	6%	2%	0%	-5%	-1%	4%	4%	0%	0%	1%	0%	-1%	0%	0%	-1%	0%	-4%	0%	-8%	10%	6%
h_3plusworkers	-15%	-7%	-16%	0%	-9%	-23%	-32%	7%	1%	0%	-3%	0%	-11%	0%	1%	-1%	-32%	-4%	-46%	4%	-52%	-60%
h_income0_30K	-15%	-10%	-8%	0%	-26%	-17%	-8%	-12%	-1%	0%	-4%	-3%	-5%	0%	0%	0%	-6%	-13%	-13%	-10%	-2%	0%
h_income30_60K	-2%	-4%	-1%	0%	-6%	-11%	-7%	-11%	0%	0%	-2%	-1%	-5%	0%	0%	0%	-2%	-6%	-13%	-3%	-2%	-1%
h_income60_100K	4%	11%	-1%	0%	6%	-8%	1%	1%	0%	0%	-2%	0%	1%	0%	0%	0%	2%	6%	17%	-3%	4%	-6%
h_income100_150K	10%	5%	1%	0%	15%	36%	14%	4%	0%	0%	1%	2%	5%	0%	1%	0%	5%	16%	6%	3%	2%	5%
h_income150Kplus	16%	-4%	12%	0%	27%	23%	2%	8%	0%	0%	2%	4%	5%	0%	0%	0%	26%	-3%	-1%	13%	4%	0%
h_0cars	0%	-7%	2%	0%	-28%	-22%	4%	-18%	-58%	0%	-2%	-1%	-7%	0%	-1%	0%	-1%	-5%	17%	-11%	1%	13%
h_1car	-5%	-7%	8%	0%	-8%	0%	5%	-6%	3%	0%	-1%	-1%	-1%	0%	0%	0%	-1%	1%	8%	-5%	-2%	14%
h_2cars	4%	-2%	9%	0%	8%	5%	1%	0%	3%	0%	0%	1%	-2%	0%	0%	0%	0%	-8%	1%	2%	-1%	4%
h_3cars	-3%	-4%	-9%	0%	-2%	6%	1%	6%	3%	0%	2%	3%	-1%	0%	0%	0%	3%	4%	-14%	5%	1%	-17%
h_4pluscars	3%	28%	-33%	0%	23%	-22%	-13%	15%	3%	1%	0%	1%	14%	0%	1%	0%	-3%	2%	-6%	-10%	14%	-42%
h_headu35	-5%	28%	-3%	0%	12%	6%	5%	0%	0%	0%	-1%	-1%	-2%	0%	0%	0%	-1%	-23%	-1%	4%	0%	19%
h_head3564	3%	-5%	4%	0%	4%	-1%	-4%	1%	0%	0%	1%	2%	1%	0%	0%	0%	2%	7%	7%	-2%	0%	-4%
h_headо65	-2%	-5%	-14%	0%	-15%	-5%	5%	-3%	0%	0%	-4%	-3%	-6%	0%	0%	-1%	-5%	-4%	-17%	2%	-1%	-19%
p_total	-6%	-4%	-5%	0%	-3%	-13%	-4%	-3%	-1%	-1%	-1%	-1%	-14%	0%	-1%	-1%	-12%	-4%	-5%	3%	-5%	-9%
p_male	-11%	-3%	-5%	0%	1%	-19%	-4%	3%	-1%	-1%	-2%	0%	-20%	0%	-1%	-1%	-12%	-9%	-8%	3%	-7%	-16%
p_female	-1%	-4%	-5%	0%	-5%	-6%	-5%	-8%	-1%	-1%	0%	-3%	-9%	0%	-1%	-1%	-12%	1%	-2%	3%	-3%	-3%
p_age0-4	-2%	-9%	-20%	0%	-10%	-15%	-19%	-11%	0%	-1%	13%	2%	-27%	0%	1%	-1%	-18%	-49%	16%	-3%	-3%	-16%
p_age5-15	-4%	-16%	-9%	0%	-20%	-6%	-12%	11%	0%	-1%	10%	5%	-20%	0%	1%	-1%	-22%	-19%	13%	9%	1%	15%
p_age16-17	-40%	-25%	24%	0%	3%	-13%	-8%	3%	-1%	-1%	-2%	1%	-13%	0%	-1%	-2%	-19%	37%	-46%	0%	-15%	-22%
p_age18-24	-43%	-20%	-15%	0%	-38%	-48%	-29%	0%	-1%	-2%	-2%	-2%	-20%	0%	-2%	-1%	-24%	-23%	-39%	-8%	-16%	-47%
p_age25-49	-2%	-1%	3%	0%	13%	-14%	3%	-3%	-1%	-1%	-5%	-2%	-11%	0%	-2%	-1%	-4%	11%	-6%	-1%	-6%	-10%
p_age50-64	0%	3%	1%	0%	2%	3%	3%	-8%	-1%	-1%	-2%	1%	-9%	0%	-1%	-1%	-7%	-8%	-3%	7%	-8%	-12%
p_age65plus	3%	5%	-21%	1%	-1%	-13%	-4%	-5%	0%	-1%	-6%	-7%	-13%	0%	0%	-2%	-17%	25%	-2%	13%	5%	9%
p_ftworker	-4%	-3%	-10%	0%	-6%	-15%	-5%	1%	-1%	-1%	-3%	0%	-5%	0%	-1%	0%	-6%	-8%	-1%	2%	-12%	-12%
p_ptworker	-13%	8%	3%	0%	10%	3%	2%	-1%	0%	-1%	4%	-1%	0%	0%	-1%	0%	-9%	7%	-28%	11%	-4%	-4%
p_nonworker	-7%	-6%	-3%	1%	-3%	-15%	-5%	-6%	0%	-1%	-1%	-3%	-23%	0%	-1%	-2%	-17%	-3%	-2%	1%	-1%	-9%
p_hispanic	-31%	-40%	-51%	0%	-41%	-45%	-17%	-17%	-1%	-1%	4%	-4%	-35%	0%	-1%	-1%	-19%	-14%	-40%	-1%	-7%	-15%
p_nothispanic	6%	10%	36%	0%	17%	16%	-1%	0%	-1%	-1%	-2%	-1%	-7%	0%	-1%	-1%	-7%	8%	23%	6%	2%	6%
p_univstudent	9%	50%	-17%	0%	22%	-8%	-20%	-5%	-1%	-1%	-5%	-1%	-7%	0%	0%	-1%	-14%	3%	-38%	11%	0%	-13%
p_not_univstud	-8%	-6%	-4%	0%	-4%	-13%	-3%	-2%	-1%	-1%	-1%	-1%	-15%	0%	-1%	-1%	-12%	-4%	-1%	2%	-5%	-9%

Table 21 shows the results from another run in which five PUMAs were left separate, but others were combined with adjacent PUMAs, mostly similar to SANDAG's "MSA" areas. See also the map provided in Map of the study region by MSA and PUMA. The combined PUMAs are:

- 7301 (Oceanside) with 7304 (Carlsbad).
- 7309 (Encinitas) with 7311 (Del Mar Mesa).
- 7317 (Central, Mid-City) with 7318 (Encanto, Skyline).
- 7320 (Sweetwater) with 7321 (Chula Vista) and 7322 (Otay Mesa, South Bay).
- 7303 (Vista City) with 7305 (Escondido), 7306 (Escondido City) and 7302 (Fallbrook, Alpine).
- 7307 (Lakeside, Ramona) with 7308 (Poway), 7313 (El Cajon, Santee) and 7319 (Lemon Grove).

Table 21 shows that the targets are matched closely for one of those groups (7309 and 7311), and matched more closely for the other groups, but there are still some large deviations, particularly for the 3+ workers, age 18–24, Hispanic, and university student targets.

RSG raised the maximum targets for particular groups—first to five times the initial weight and then to six times the initial weight—to arrive at the results shown in Table 22. All the targets are now within a few percentage points for each of the PUMAs or groups, except for a few cases, such as 10% too few Hispanic persons in the Vista City/Escondido areas (compared to 80–90% too few Hispanics in these areas in the initial weighted sample). It might be possible to match this target more closely by increasing the maximum weights to above six times the initial weight, but best practice is too many households with extreme values on the weights, so there is a tradeoff between allowing more extreme weights and matching targets more closely. **It is RSG's current judgment that the weights are not allowed to go higher than six times the initial expansion weights, and that the resulting weights in Table 22 match the targets as closely as possible while avoiding extreme values.**

Figure 1 shows histograms of the weights resulting from the run shown in Table 21 (hhnewwt_4x) and the weights resulting from the run shown in Table 22 (hhnewwt_456x), and Figure 2 shows a scatter plot of the two sets of weights against each other. The histograms indicate that it is a relatively small tail of the distribution that has the large weights, and these become higher in the second plot. The scattergram indicates that some households take on the higher maximum weight, while other households' weights go toward the minimum limit to compensate. (The average weight is approximately 181.4 in both cases.)

TABLE 21: DEVIATIONS FROM TARGETS AFTER REWEIGHTING, GROUPING SOME PUMAS AND USING MAXIMUM WEIGHT OF FOUR TIMES (4X) INITIAL WEIGHT

Areas	7310	7312	7314	7315	7316	7301	7309	7320	7317	7307	7303
						7304	7311	7321	7318	7308	7305
								7322		7313	7306
										7319	7302
Min.Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Max.Ratio	4	4	4	4	4	4	4	4	4	4	4
h_total	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_size1	0%	1%	0%	0%	0%	0%	0%	1%	3%	1%	1%
h_size2	0%	0%	0%	0%	0%	0%	0%	1%	3%	1%	1%
h_size3	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	0%
h_size4	0%	-1%	0%	0%	0%	0%	0%	1%	2%	1%	1%
h_size5plus	0%	0%	0%	0%	0%	-1%	0%	-4%	-17%	-8%	-8%
h_0workers	0%	0%	0%	-1%	1%	-1%	-1%	-1%	3%	0%	0%
h_1worker	0%	0%	0%	0%	0%	0%	0%	3%	2%	0%	2%
h_2workers	0%	0%	0%	0%	-1%	1%	0%	1%	0%	0%	1%
h_3plusworkers	0%	0%	0%	1%	-1%	2%	1%	-13%	-16%	-2%	-11%
h_income0_30K	0%	-3%	0%	0%	0%	-2%	-1%	-4%	-7%	-3%	-8%
h_income30_60K	0%	-1%	0%	0%	0%	0%	0%	-1%	-2%	-3%	-4%
h_income60_100K	0%	0%	0%	0%	0%	1%	0%	1%	5%	1%	1%
h_income100_150K	0%	2%	0%	1%	0%	1%	0%	3%	5%	2%	7%
h_income150Kplus	0%	4%	0%	0%	0%	1%	0%	6%	15%	3%	8%
h_0cars	0%	-1%	0%	-1%	0%	0%	-6%	1%	2%	-1%	-10%
h_1car	0%	-1%	0%	0%	0%	-1%	0%	-2%	-1%	-2%	-1%
h_2cars	0%	1%	0%	0%	0%	0%	0%	0%	-1%	0%	1%
h_3cars	0%	3%	0%	0%	0%	1%	0%	1%	4%	0%	0%
h_4pluscars	1%	1%	0%	1%	0%	1%	0%	2%	-4%	3%	2%
h_headu35	0%	-1%	0%	0%	0%	0%	0%	4%	-4%	0%	2%
h_head3564	0%	2%	0%	0%	0%	1%	0%	0%	2%	0%	0%
h_headо65	0%	-3%	0%	0%	-1%	-1%	0%	-6%	-3%	-2%	-2%
p_total	-1%	-1%	0%	-1%	-1%	-1%	-1%	-1%	-4%	-3%	-3%
p_male	-1%	0%	0%	-1%	-1%	-3%	-1%	-3%	-5%	-3%	-4%
p_female	-1%	-3%	0%	-1%	-1%	2%	-1%	0%	-4%	-3%	-3%
p_age0-4	-1%	2%	0%	1%	-1%	1%	0%	-1%	-14%	-6%	-3%
p_age5-15	-1%	5%	0%	1%	-1%	1%	0%	6%	-12%	0%	-6%
p_age16-17	-1%	1%	0%	-1%	-2%	0%	-1%	-6%	4%	-3%	0%
p_age18-24	-2%	-2%	0%	-2%	-1%	-20%	-1%	-9%	-21%	-4%	-18%
p_age25-49	-1%	-2%	0%	-2%	-1%	1%	-1%	-4%	4%	-2%	0%
p_age50-64	-1%	1%	0%	-1%	-1%	0%	-1%	-3%	-6%	-4%	1%
p_age65plus	-1%	-7%	0%	0%	-2%	6%	-1%	7%	7%	-5%	-6%
p_ftworker	-1%	0%	0%	-1%	0%	-1%	-2%	-3%	-6%	-1%	-7%
p_ptworker	-1%	-1%	0%	-1%	0%	-1%	-1%	3%	0%	0%	6%
p_nonworker	-1%	-3%	0%	-1%	-2%	0%	0%	-1%	-5%	-5%	-3%
p_hispanic	-1%	-4%	0%	-1%	-1%	-4%	-1%	-4%	-14%	-11%	-37%
p_nothispanic	-1%	-1%	0%	-1%	-1%	1%	-1%	3%	4%	0%	18%
p_univstudent	-1%	-1%	0%	0%	-1%	1%	-1%	5%	-6%	-5%	10%
p_not_univstud	-1%	-1%	0%	-1%	-1%	-1%	-1%	-2%	-4%	-3%	-4%

TABLE 22: DEVIATIONS FROM TARGETS AFTER REWEIGHTING, GROUPING SOME PUMAS, AND USING MAXIMUM WEIGHTS OF FOUR, FIVE, OR SIX TIMES (456X) INITIAL WEIGHT FOR DIFFERENT GROUPS

Areas	7310	7312	7314	7315	7316	7301	7309	7320	7317	7307	7303
						7304	7311	7321	7318	7308	7305
								7322		7313	7306
										7319	7302
Min.Ratio	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Max.Ratio	4	4	4	4	4	5	5	5	6	5	6
h_total	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_size1	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%
h_size2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_size3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_size4	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_size5plus	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%
h_0workers	0%	0%	0%	-1%	1%	0%	-1%	1%	0%	0%	-1%
h_1worker	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_2workers	0%	0%	0%	0%	-1%	0%	0%	0%	0%	0%	1%
h_3plusworkers	0%	0%	0%	1%	-1%	1%	1%	-1%	-1%	0%	0%
h_income0_30K	0%	-3%	0%	0%	0%	0%	0%	-1%	0%	-1%	-5%
h_income30_60K	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%
h_income60_100	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
h_income100_15	0%	2%	0%	1%	0%	0%	0%	1%	0%	0%	5%
h_income150Kplu	0%	4%	0%	0%	0%	0%	0%	1%	1%	1%	3%
h_0cars	0%	-1%	0%	-1%	0%	0%	-1%	0%	0%	0%	-3%
h_1car	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	-2%
h_2cars	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%
h_3cars	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	1%
h_4pluscars	1%	1%	0%	1%	0%	0%	0%	0%	0%	1%	2%
h_headu35	0%	-1%	0%	0%	0%	0%	0%	1%	0%	0%	1%
h_head3564	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%
h_headо65	0%	-3%	0%	0%	-1%	0%	0%	-1%	-1%	-1%	-1%
p_total	-1%	-1%	0%	-1%	-1%	0%	-1%	-1%	-1%	-2%	-2%
p_male	-1%	0%	0%	-1%	-1%	-1%	-1%	-1%	-1%	-2%	-2%
p_female	-1%	-3%	0%	-1%	-1%	0%	-1%	0%	-1%	-2%	-2%
p_age0-4	-1%	2%	0%	1%	-1%	0%	0%	-2%	-2%	-2%	-8%
p_age5-15	-1%	5%	0%	1%	-1%	0%	0%	-1%	-2%	-1%	-3%
p_age16-17	-1%	1%	0%	-1%	-2%	-1%	-1%	-1%	0%	-1%	3%
p_age18-24	-2%	-2%	0%	-2%	-1%	-2%	-1%	-1%	-1%	-2%	-4%
p_age25-49	-1%	-2%	0%	-2%	-1%	0%	-1%	-1%	0%	-1%	1%
p_age50-64	-1%	1%	0%	-1%	-1%	-1%	-1%	0%	-1%	-2%	0%
p_age65plus	-1%	-7%	0%	0%	-2%	2%	-1%	0%	0%	-2%	-6%
p_ftworker	-1%	0%	0%	-1%	0%	-1%	-2%	1%	0%	-1%	-3%
p_ptworker	-1%	-1%	0%	-1%	0%	-1%	0%	1%	0%	-1%	3%
p_nonworker	-1%	-3%	0%	-1%	-2%	0%	0%	-2%	-1%	-2%	-2%
p_hispanic	-1%	-4%	0%	-1%	-1%	-1%	-1%	-1%	-1%	-2%	-10%
p_nothispanic	-1%	-1%	0%	-1%	-1%	0%	-1%	0%	0%	-1%	3%
p_univstudent	-1%	-1%	0%	0%	-1%	1%	-1%	0%	-1%	-2%	3%
p_not_univstud	-1%	-1%	0%	-1%	-1%	0%	-1%	-1%	-1%	-2%	-2%

FIGURE 1: HISTOGRAMS OF WEIGHTS WITH MAXIMUM OF FOUR TIMES INITIAL WEIGHT VS. WEIGHTS WITH MAXIMUM OF FOUR, FIVE, OR SIX TIMES (456X) INITIAL WEIGHT

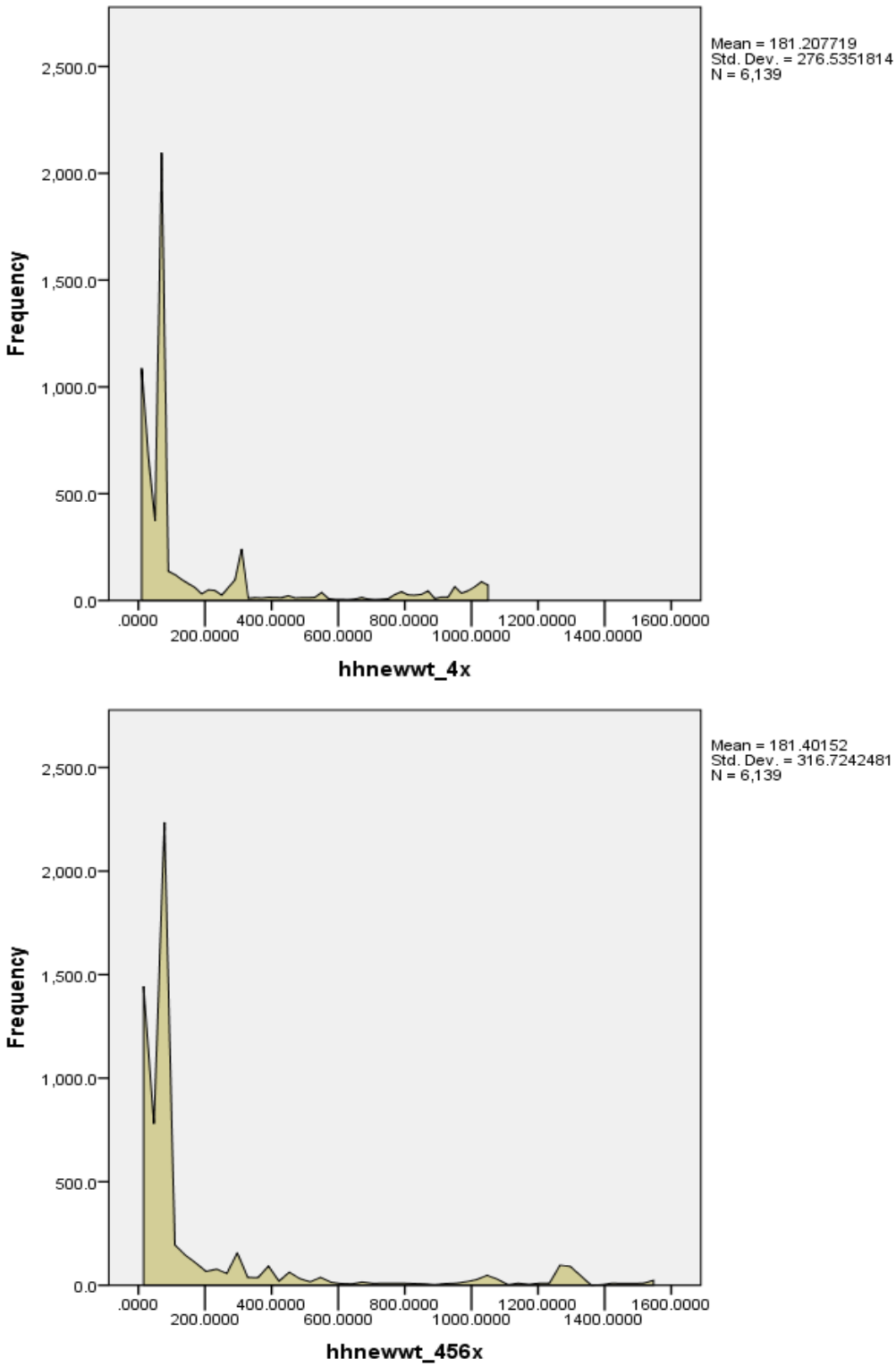
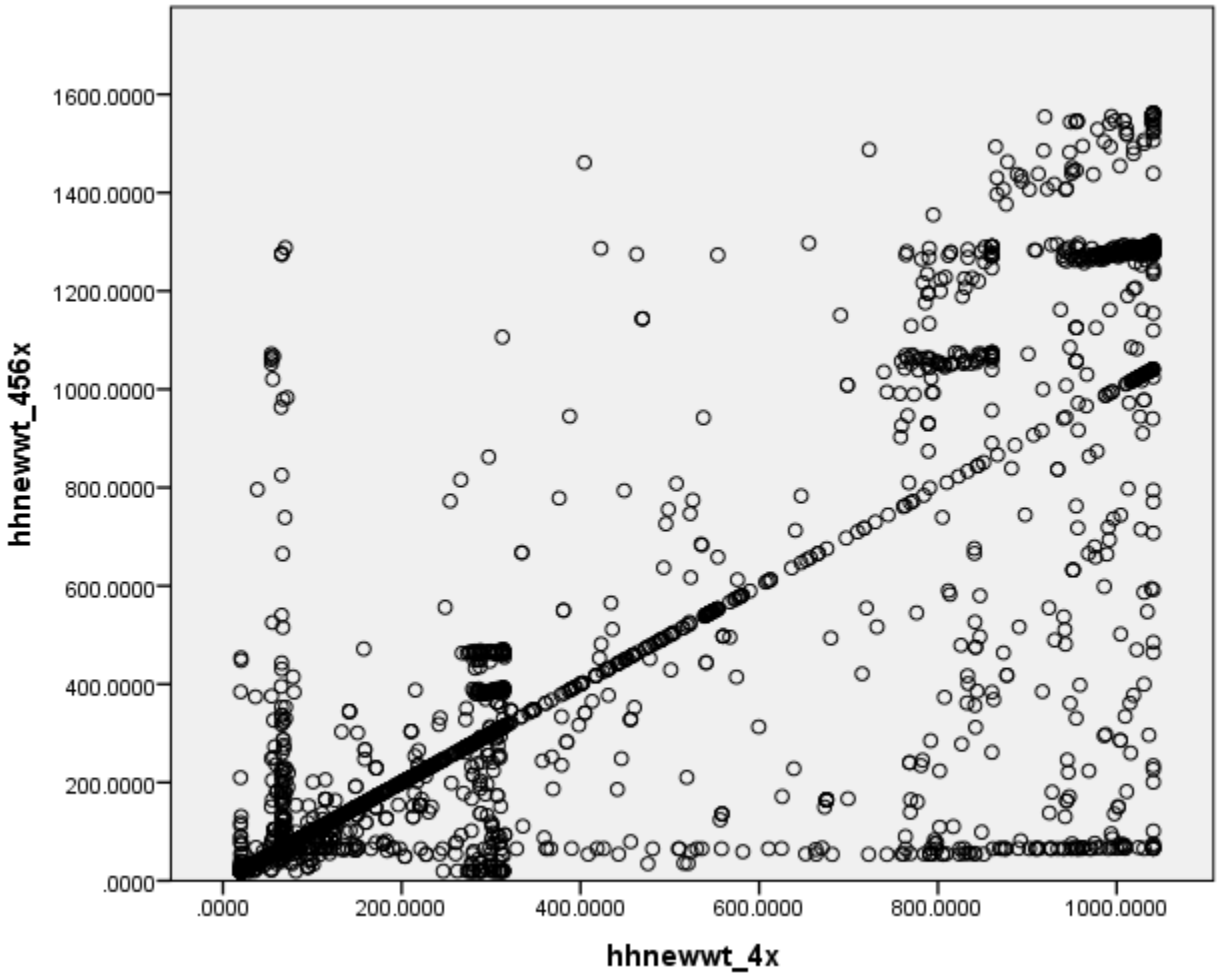


FIGURE 2: SCATTER PLOT OF WEIGHTS WITH MAXIMUM OF FOUR TIMES INITIAL WEIGHT VS. WEIGHTS WITH MAXIMUM OF FOUR, FIVE, OR SIX TIMES (456X) INITIAL WEIGHT



ADJUSTING THE WEIGHTS FOR MULTIDAY DATA

The concepts of household-days and person-days of travel are very important for the SANDAG activity-based model. Conceptually, each household-day and person-day should represent an average weekday's activities and travel (if any trips are made). Table 23 includes all complete weekday person-days in households that provided complete data for at least one weekday. These are the same 6,139 households that were included in the household weighting. (Sixty households had complete travel days only on the weekend. RSG excluded these households from the weighting analysis.) All the households who completed the survey online or by telephone, using the more traditional travel diary methods, have a single travel day that is on a Tuesday, Wednesday, or Thursday. Table 23 shows that there are 4,080 such "online" travel days in the data, split evenly across the three days. Households that responded using rMove™ could respond for up to seven days, but only the weekday travel days are included in the travel-day weighting. Table 23 shows that for weekdays when all household members provided complete data, there are 28,605 "rMove-complete HH day" person-days in the data, also split quite evenly across the five weekdays. The data include 6,163 "rMove-incomplete HH day" person travel days. These are cases when a person provided complete data for a weekday, but at

least one other household member did not. These cases are left in the data as possibly useful for model estimation, but are given a weight of zero for model calibration. In other words, the person-day weights are only positive for complete household weekdays.

The lower portion of Table 23 shows that the rMove person-days have an average of 4.60 trips per day, while the online person-days have an average of 3.75 trips per day. (All transit trips have been unlinked into access, egress, and transit portions, so the number of linked trips would be somewhat lower.) Table 24 shows the same distributions as Table 23, but now weighting each person-day using the household weight (hhnewwt_456x). The distribution of trips by weekday and the average trips per person-day remain like those in Table 23, although the difference in trips rates between the rMove and online data becomes somewhat larger.

For Table 25, RSG created a factored weight so that all valid household weekdays would add to one weighted weekday for each person. For each complete HH weekday, the "multiday factor" = 1 / (complete HH weekdays), otherwise it equals zero. The factored person-day weight (called "multiday_weight_456x" is equal to the household weight (newwt_456x) times the multiday factor. Table 25 shows that the total number of weighted person-weekdays is 2,922,538, which is the same as the weighted number of person records in the person file, since each person contributes exactly one person-day after adjustment with this weight. Also, the "rMove- incomplete HH day" rows drop out of the table, since those have a multiday weight of zero.

For rMove, the average number of trips from Monday and Friday is 4.65, which is like the average number of trips from Tuesday to Thursday (4.70), and the fraction of travel days across the weekdays is similar. Also, applying the multiday factor changes the average number of trips per rMove person-day from 4.71 to 4.68. These differences are small enough that it does not seem necessary to apply any differential factoring across the different days of the week.

TABLE 23: PERSON-DAY RECORDS, BY TYPE AND WEEKDAY

NUMBER OF PERSON-DAY RECORDS	TRAVEL DAY OF WEEK					TOTAL
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
rMove-complete HH day	5,497	6,006	5,867	5,791	5,444	28,605
rMove-incomplete HH day	1,366	1,103	1,133	1,165	1,396	6,163
Online diary	0	1,327	1,377	1,376	0	4,080
Total	**6,863**	**8,436**	**8,377**	**8,332**	**6,840**	**38,848**
Fraction by Day of Week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Total**
rMove-complete HH day	19.2%	21.0%	20.5%	20.2%	19.0%	100%
rMove-incomplete HH day	22.2%	17.9%	18.4%	18.9%	22.7%	100%
Online diary	--	32.5%	33.8%	33.7%	--	100%
Total	**17.7%**	**21.7%**	**21.6%**	**21.4%**	**17.6%**	**100%**
Average Trips per Person-Day	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Total**
rMove-complete HH day	4.27	4.43	4.67	4.72	4.90	4.60
rMove-incomplete HH day	4.14	4.15	4.23	4.38	4.72	4.34
Online diary	--	3.74	3.78	3.72	--	3.75
Total	**4.24**	**4.29**	**4.47**	**4.50**	**4.86**	**4.47**

TABLE 24: WEIGHTED PERSON-DAY RECORDS BY TYPE AND WEEKDAY

WEIGHTED PERSON-DAY RECORDS	TRAVEL DAY OF WEEK					TOTAL
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
rMove-complete HH day	1,172,250	1,315,285	1,223,056	1,253,128	1,156,692	6,120,411
rMove-incomplete HH day	419,916	342,270	386,536	359,072	434,805	1,942,599
Online diary	--	313,470	362,985	403,423	--	1,079,878
Total	**1,592,166**	**1,971,025**	**1,972,577**	**2,015,623**	**1,591,497**	**9,142,888**
Fraction by Day of Week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Total**
rMove-complete HH day	19.2%	21.5%	20.0%	20.5%	18.9%	100%
rMove-incomplete HH day	21.6%	17.6%	19.9%	18.5%	22.4%	100%
Online diary	--	29.0%	33.6%	37.4%	--	100%
Total	**17.4%**	**21.6%**	**21.6%**	**22.0%**	**17.4%**	**100%**
Weighted Average Trips per Person-Day	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Total**
rMove-complete HH day	4.42	4.54	4.82	4.79	4.98	4.71
rMove-incomplete HH day	4.27	4.34	4.32	4.63	4.99	4.52
Online diary	--	3.40	3.44	3.42	--	3.42
Total	**4.38**	**4.33**	**4.47**	**4.49**	**4.98**	**4.52**

TABLE 25: WEIGHTED PERSON-DAY RECORDS BY TYPE AND WEEKDAY, USING THE HH MULTIDAY ADJUSTED WEIGHT

WEIGHTED PERSON-DAY RECORDS	TRAVEL DAY OF WEEK					TOTAL
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
rMove-complete HH day	364,880	407,995	373,066	376,240	320,479	1,842,660
Online diary	--	313,470	362,985	403,423	--	1,079,878
Total	**364,880**	**721,465**	**736,051**	**779,663**	**320,479**	**2,922,538**
Fraction by Day of Week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Total**
rMove-complete HH day	19.8%	22.1%	20.2%	20.4%	17.4%	100%
Online diary	--	29.0%	33.6%	37.4%	--	100%
Total	**12.5%**	**24.7%**	**25.2%**	**26.7%**	**11.0%**	**100%**
Weighted Average Trips per Person-Day	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Total**
rMove-complete HH day	4.43	4.44	4.87	4.82	4.91	4.68
Online diary	--	3.40	3.44	3.42	--	3.42
Total	**4.43**	**3.99**	**4.17**	**4.10**	**4.91**	**4.22**

HOUSEHOLD, PERSON, AND DAY LEVEL WEIGHTING DELIVERABLE

The data include 6,139 households that contain complete and valid travel-day data for all household members for at least one weekday (Monday–Friday), plus another 60 households whose only complete travel day(s) was on a weekend day. The dataset contains trip- and location-level data for all complete and valid person travel days, including any days where one or more household members did *not* provide complete or valid travel-day data. The household and person weights, calculated using the process explained above, are attached to the household and person records. The multiday weight, described in the preceding section, is attached to the day-level file, and could also be attached to the trip records.

Table 26 recommends which weights to use for which levels of analysis.

TABLE 26: WEIGHTS TO USE AT DIFFERENT LEVELS OF ANALYSIS

MODEL LEVEL	CASES USED	RECOMMENDED WEIGHT
Household-level (e.g., auto ownership)	All households with at least one completed weekday (Monday–Friday)	HHnewwt_456x (also called hh_final_weight_456x in the dataset and codebooks)
Person-level (e.g., workplace location or school location)	All persons in households with at least one completed weekday	HHnewwt_456x (also called hh_final_weight_456x in the dataset and codebooks)
Household-day-level (e.g., joint DAP or joint tour generation)	All complete person-days that are part of complete household weekdays	Multiday_weight_456x
Person-day level (e.g., individual discretionary tour generation)	All complete person-days that are part of complete household weekdays	Multiday_weight_456x
Trip level (and tour level when derived)	All trips that are part of complete person-days that are part of complete household weekdays	Multiday_weight_456x. Further trip rate adjustment factors are described later in the memo

TRIP RATE ANALYSIS AND ADJUSTMENT

Most analyses and model calibration using the data will used linked trips, merging transit access and egress walk or bike trips with the transit trips. Because the trip data has been unlinked for both modes of data collection ("rMove" is the smartphone-based sample, and "rSurvey" is the online/telephone-based sample), the first step in trip rate analysis was to count "linked trips" by omitting the unlinked walk/bike access and egress legs. Table 27 shows the number of unlinked trips on over 280,000 unlinked trips records in the data. (The total trip file includes weekends as well as some incomplete person-days and household-days.) Table 28 shows the percentage of trips by mode type for the two data collection methods. The most pronounced difference is the larger percent of transit trips in the rSurvey data compared to the rMove data, and, correspondingly, the much larger percentage of walk/bike access and egress trips in the rSurvey data. Initial analysis has indicated that the larger transit share in the rSurvey sample is due mostly to the larger percentage

of low-income and zero-vehicle households using that collection method. This memo later revisits the reweighted and adjusted mode shares.

TABLE 27: UNLINKED TRIPS, BY MODE AND DATA COLLECTION TYPE (UNWEIGHTED)

MODE TYPE	rMOVE	rSURVEY	TOTAL
Other/missing	16,040	82	16,122
Walk	26,094	1,864	27,958
Bike	2,305	171	2,476
Car	212,577	10,348	222,925
Taxi	1,945	54	1,999
Transit	4,886	1,148	6,034
School bus	233	39	272
Walk/bike access	1,273	676	1,949
Walk/bike egress	1,503	907	2,410
Total	**266,856**	**15,289**	**282,145**

TABLE 28: UNLIKED TRIP MODE PERCENTAGES, BY DATA COLLECTION TYPE (UNWEIGHTED)

MODE TYPE	rMOVE	rSURVEY	TOTAL
Other/missing	6.0%	0.5%	5.7%
Walk	9.8%	12.2%	9.9%
Bike	0.9%	1.1%	0.9%
Car	79.7%	67.7%	79.0%
Taxi	0.7%	0.4%	0.7%
Transit	1.8%	7.5%	2.1%
School bus	0.1%	0.3%	0.1%
Walk/bike access	0.5%	4.4%	0.7%
Walk/bike egress	0.6%	5.9%	0.9%
Total	**100%**	**100%**	**100%**

The next step was to count the number of linked and unlinked trip records for each person-day and append those to the person-day file. As we are only weighting the data for complete household weekdays, the person-

day file was screened to only include person-days for weekdays where complete data was collected for all household members. That is a total of 28,605 unweighted person-days with rMove data, and 4,080 unweighted person-days for rSurvey data. The average number of linked trips for each day and data type is shown in Table 29. Overall, the 3.36 linked trips/day in the rSurvey data is 26% lower than the 4.54 linked trips/day in the rMove data. The number of trips per day increases from Monday to Friday in the rMove data, but does not vary as much in the rSurvey data.

TABLE 29: AVERAGE LINKED TRIPS/DAY, BY WEEKDAY AND DATA COLLECTION TYPE (UNWEIGHTED)

DAY OF WEEK	rMOVE	rSURVEY	TOTAL
Monday	4.21	--	4.21
Tuesday	4.37	3.35	4.19
Wednesday	4.62	3.41	4.39
Thursday	4.65	3.32	4.39
Friday	4.84	--	4.84
Total	**4.54**	**3.36**	**4.39**

Table 30 and Figure 3 present the average number of trips per weekday, by age group and data collection type. For the rMove data, the trip rates peak in the 35–44 and 45–49 age ranges. (The 75–79 and 85+ age groups have high rates, but those are small samples.) The rSurvey data also has the highest rates in the 35–44 and 45–49 age ranges, but with less difference between the age groups. The gap between the rMove and rSurvey trip rates is highest for the young adults in the 18–24 and 25–34 age groups. RSG has observed a similar gap for those age groups in comparisons with the Seattle, North Carolina, and Indiana surveys, indicating that the young adults in those age groups appear to have the largest nonresponse bias using diary-based methods as compared to smartphone-based methods.

It is important to take account of the fact that some of the data was reported by proxy (without the person whose trips were reported being present). Proxy reporting was done for all children under 18, except for some children age 16-17 who were allowed by their parents to use rMove. For both rMove and rSurvey, children's trips were first imputed using the adults' trips for which the children were co-travelers, and then the adult(s) were asked to add by proxy any other trips that the children made without them. The lower trip rates in the age 16-17 group are likely since older children make more independent trips that the parents cannot report completely by proxy.

Table 31 and Figure 4 show the same information as Table 30 and Figure 3, but now with the nonproxy and proxy responses treated separately. For rMove respondents, there are no proxy responses for adults, while approximately 20% of the adult household diary days in rSurvey were reported by proxy. Figure 4 shows that the nonproxy trip rates are clearly higher than the proxy-based trip rates for the rSurvey data (lower in every adult age group, and approximately 22% lower overall). For rMove, the 16–17 age group is the only age group with both nonproxy and proxy cases, and the children using rMove made 4.05 trips per day, while the other children between the ages of 16 and 17 only had 2.29 trips per day reported by proxy.

TABLE 30: AVERAGE LINKED TRIPS/WEEKDAY, BY AGE GROUP AND DATA COLLECTION TYPE (UNWEIGHTED)

AGE	rMOVE	rSURVEY
Under 5 years old	3.23	2.65
5–15 years	3.32	3.20
16–17 years	2.95	2.66
18–24 years	4.52	2.81
25–34 years	4.82	3.04
35–44 years	5.17	3.90
45–49 years	5.56	3.69
50–54 years	4.82	3.52
55–59 years	4.56	3.55
60–64 years	4.40	3.38
65–74 years	4.35	3.62
75–79 years	4.43	3.42
80–84 years	3.46	3.25
85 years or older	4.02	2.27
Total	**4.54**	**3.36**

FIGURE 3: AVERAGE LINKED TRIPS/WEEKDAY, BY AGE AND DATA TYPE

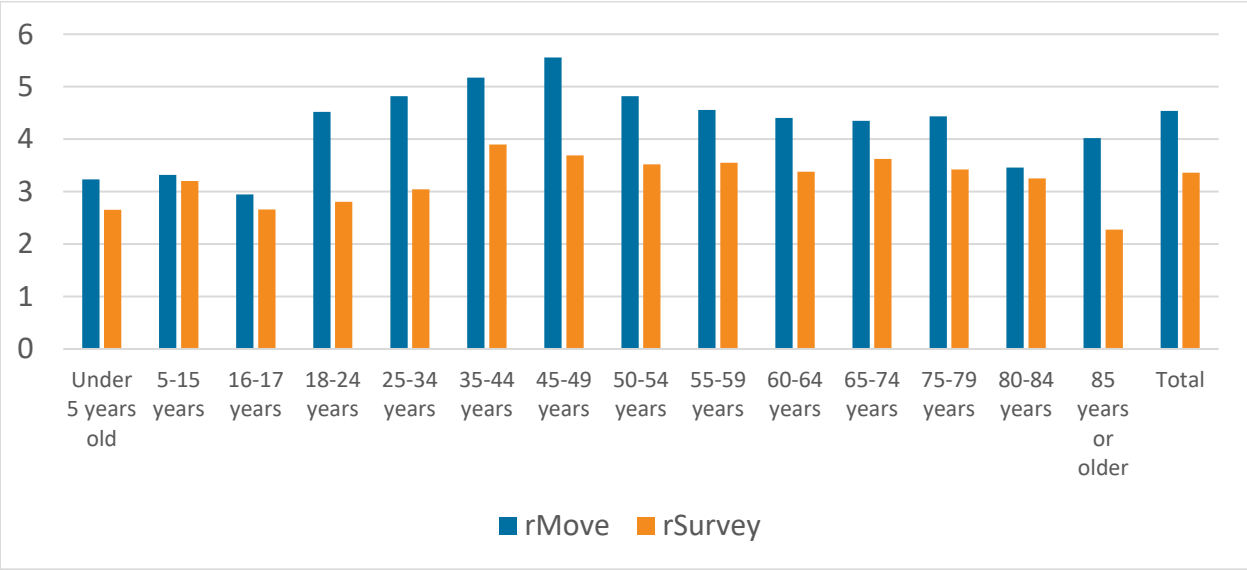
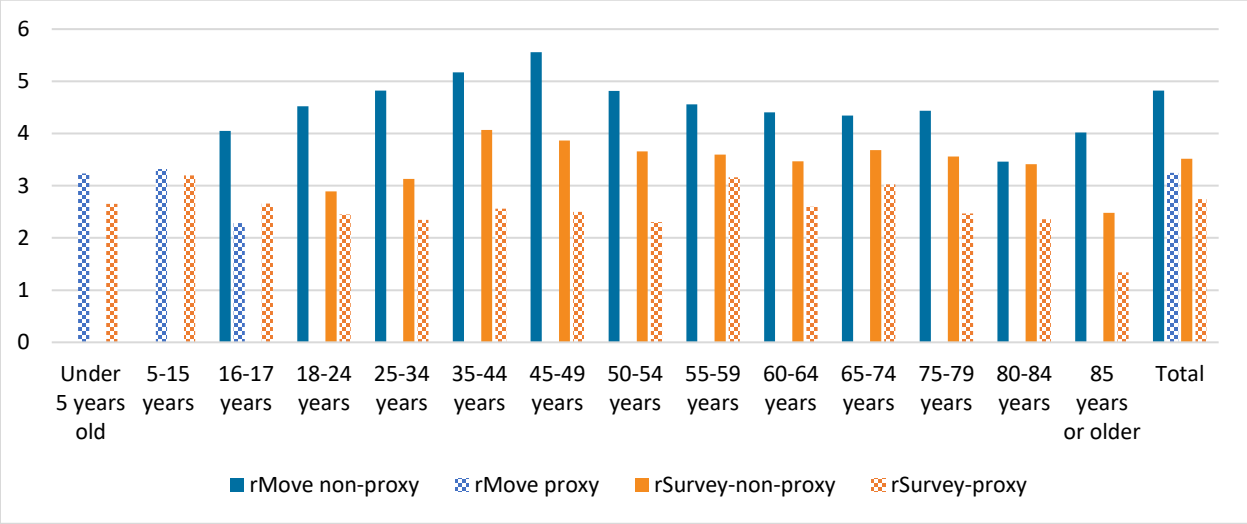


TABLE 31: AVERAGE LINKED TRIPS/WEEKDAY, BY AGE GROUP AND DATA COLLECTION TYPE (UNWEIGHTED)

AGE	rMOVE NONPROXY	rMOVE PROXY	rSURVEY-NONPROXY	rSURVEY-PROXY
Under 5 years old	--	3.23	--	2.65
5–15 years	--	3.32	--	3.20
16–17 years	4.05	2.29	--	2.66
18–24 years	4.52	--	2.89	2.45
25–34 years	4.82	--	3.13	2.34
35–44 years	5.17	--	4.07	2.56
45–49 years	5.56	--	3.86	2.50
50–54 years	4.82	--	3.66	2.30
55–59 years	4.56	--	3.60	3.16
60–64 years	4.40	--	3.47	2.60
65–74 years	4.35	--	3.68	3.02
75–79 years	4.43	--	3.56	2.47
80–84 years	3.46	--	3.41	2.36
85 years or older	4.02	--	2.48	1.34
Total	**4.82**	**3.25**	**3.51**	**2.75**

FIGURE 4: AVERAGE LINKED TRIPS/WEEKDAY BY AGE AND DATA COLLECTION TYPE



As RSG has found in other comparisons, one of the main sources of the differences in trips rates that people are more likely to report no trips at all using rSurvey (16.6% of days with zero trips) as compared to rMove (9.7% of person-days with zero trips). As shown in Table 32 and Figure 5, rSurvey also has a substantially higher percentage of people reporting only two trips, while rMove has a higher proportion for all the frequencies of five trips/day or higher. With rMove, 7.2% of person-days have 10 trips or more, compared to 2.7% with rSurvey.

TABLE 32: DISTRIBUTION OF LINKED TRIPS/WEEKDAY, BY DATA COLLECTION TYPE (UNWEIGHTED)

NUMBER OF TRIPS	rMOVE	rSURVEY	TOTAL
0 trips	9.7%	16.6%	10.6%
1 trip	3.5%	1.8%	3.3%
2 trips	16.0%	27.8%	17.4%
3 trips	12.4%	11.8%	12.3%
4 trips	14.6%	14.8%	14.7%
5 trips	11.8%	9.2%	11.5%
6 trips	9.1%	7.0%	8.8%
7 trips	6.9%	3.7%	6.5%
8 trips	5.1%	2.6%	4.8%
9 trips	3.6%	2.0%	3.4%
10+ trips	7.2%	2.7%	6.7%
Total	**100.0%**	**100.0%**	**100.0%**

FIGURE 5: DISTRIBUTION OF LINKED TRIPS/WEEKDAY, BY DATA COLLECTION TYPE

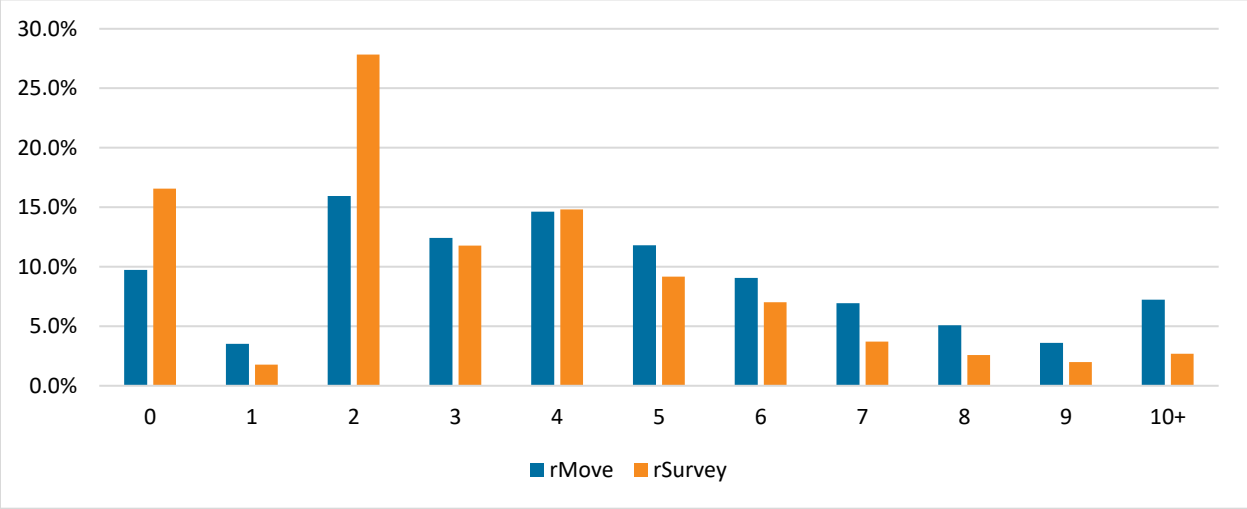
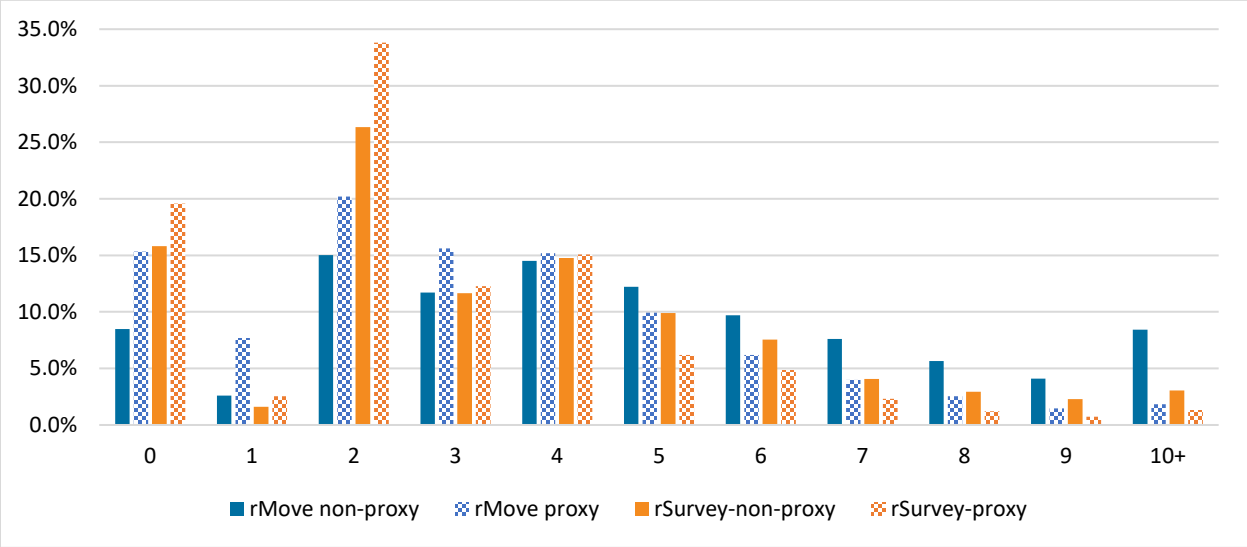


Table 33 and Figure 6 show that the proxy and nonproxy travel days also show clear differences in distributions by number of trips per weekday. For rSurvey, the proxy travel days have higher percentages with zero or two trips, and lower percentage in all the categories of five trips or more. (This is also true for the rMove proxy respondents, but since all those cases are children, it is not as clear that the proxy reporting is the cause of the discrepancy.)

TABLE 33: DISTRIBUTION OF LINKED TRIPS/WEEKDAY, BY DATA COLLECTION TYPE (UNWEIGHTED)

NUMBER OF TRIPS	rMOVE NONPROXY	rMOVE PROXY	rSURVEY-NONPROXY	rSURVEY-PROXY
0 trips	8.5%	15.3%	15.8%	19.6%
1 trip	2.6%	7.7%	1.6%	2.6%
2 trips	15.0%	20.2%	26.3%	33.8%
3 trips	11.7%	15.6%	11.7%	12.3%
4 trips	14.5%	15.2%	14.8%	15.1%
5 trips	12.2%	9.9%	9.9%	6.2%
6 trips	9.7%	6.2%	7.6%	4.9%
7 trips	7.6%	4.0%	4.1%	2.3%
8 trips	5.7%	2.5%	2.9%	1.2%
9 trips	4.1%	1.5%	2.3%	0.7%
10+ trips	8.4%	1.8%	3.0%	1.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

FIGURE 6: DISTRIBUTION OF LINKED TRIPS/WEEKDAY, BY DATA COLLECTION TYPE



MODELING OF TRIP RATES

While it appears likely that the data collection method is related to many of the differences in trip rates reported above, it is also possible that some or all the differences are due to differences in the demographic profile or other lifestyle-related differences between the respondents that used the two data collection methods. This section discusses the use of regression analysis to model the trip rates as a function of demographic variables, day of the week, and data collection method. RSG analyzed trip rates using weighted and unweighted data and the results were similar, so the unweighted regression results are reported here. (All the variables used in weighting were also included as explanatory variables in the models, so weighted estimation is not needed.) Also, RSG tested linear and logarithmic versions of the dependent trip rate variables, with the logarithmic forms reported here producing somewhat better model fits (and having the attractive property that the trip rate predicted by the models cannot go below zero). This analysis was performed on linked trips, as described earlier. Unless otherwise noted, each table and figure below is assumed to contain results of analysis upon the linked trips.

Model 1 in Table 34 uses as the explanatory variable the log of (1 + number of linked trips in the person-day). If the person makes zero trips, then this transformed variable also has the value zero. In addition to a constant intercept term, the variables in the model are as follows:

- **Weekdays** (relative to Wednesday): Monday and Tuesday have significantly fewer trips per day, and Friday has significantly more. (The green shading in the t-statistics columns is stronger for more positive effects, and the red shading is stronger for more negative effects.)
- **Work status** (relative to full-time worker): Part-time workers make somewhat more trips per day, while nonworkers travel much less often (the most significant negative effect in the model).
- **Education level** (relative to no college): Having some college, a bachelor's degree, or a graduate degree each are related to a higher number of trips/day, increasing slightly with education level.
- **Ethnicity** (relative to non-Hispanic): Hispanic adults make somewhat more trips per day.
- **Student status** (relative to all others): University students make significantly more trips per day
- **Number of children in the HH**: Adults age 18 and over make more trips for each additional kid in the household. If the adult is also a nonworker, then the additive effect is also positive.
- **Household income** (relative to intermediate incomes): Those in the lowest income households make somewhat fewer trips, and those in the highest income households make somewhat more trips. Those with missing income data also make somewhat more trips.
- **Zero-car households** (relative to 1+ car): Those in households without cars make fewer trips, all else equal.
- **Disability** (relative to all others): Those reporting a disability make significantly fewer trips per day.
- **Own a smartphone** (relative to nonsmartphone owners): Those owning smartphones tend to make more trips per day. Note that this is the main difference between being eligible to participate by rMove versus the diary-based method. Because not all smartphone owners participated using rMove, there were smartphone owners using both methods.
- **Various age groups** (relative to 35–49 age group): All else being equal, all age groups make significantly fewer trips per day than the 35–49 age group, except for the 65–74 group, which is negative but not significant. The most negative estimates are for the three age groups under 18, particularly the 16–17 age group.

- **Females** (relative to males): Gender was included in early versions of the models, but showed insignificant effects, so was dropped.

BIAS CORRECTION PARAMETERS

The additional parameters at the bottom of Table 34 are those that are all significant.

- **rSurvey (relative to rMove) for various adult age groups below age 65**: These are most negative for the 18–24 and 25–34 age groups, and less negative (but still significant) for the 35–49 and 50–64 age groups. This confirms the nonresponse bias among younger adults for diary-based methods that RSG has observed elsewhere.
- **rSurvey adult proxy (relative to rSurvey adult nonproxy**): This is also negative and significant, confirming a bias toward omitted trips with proxy reporting.
- **Age 16–17 allowed to use rMove (relative to age 16–17 proxy responses):** The positive coefficient confirms a bias toward omitted trips for proxy adult reporting relative to those captured by rMove when allowed. However, it is possible that children allowed to use rMove make more trips than children in the same age group whose parents would not allow them to use rMove.

The other two models in Table 34 effectively split Model 1 into two parts. Model 2 is a binary logit model to explain whether a person makes any trips at all (0 vs. 1+) during the day, while Model 3 is the same Model 1, but is only estimated using person-days with one or more trips (i.e., if a person does travel, how many trips do they make?). Overall, Models 2 and 3 both show similar effects as Model 1. This means that most factors related to lower trip rates are related *both* to a higher fraction of days with zero trips *and* fewer trips on the days with one or more trips. However, exceptions exist, including the following:

- **Nonworking adults** are much more likely to stay at home all day, but if they do make trips, they make just as many trips as other types of adults.
- On **Friday,** people are more likely to report zero trips (perhaps being out of town), but people tend to have significantly more trips on the days with one or more trips.
- Relative to the age 35–49 age group, those in all **the other adult age groups** are not significantly more likely to have zero trips, but they do have significantly fewer trips on the days with one or more trips.
- The same is true for the rSurvey bias parameters for the age 35–49 and 50–64 age groups. No bias exists toward more days with zero trips, but there is a bias toward fewer trips on the days with one or more trips. For the 18–24 and 25–34 age groups, the bias toward zero-trip days is less significant than the bias toward fewer trips per day with one or more trips.

TABLE 34: EXPLANATORY MODELS OF TRIP RATES AND BIASES

	Model 1 Linear Regression	LN (1+ Number of Linked Trips)	Model 2 Binary Logit	Made 1+ Linked Trips	Model 3 Linear Regression	LN (1+ Number of Linked Trips) > 0 Days Only
(Pseudo) R-squared	--	0.096	--	0.083	--	0.078
	Coeff.	T-stat	Coeff.	T-stat	Coeff.	T-stat
Constant term	10.374	490.69	-20.318	170.39	10.557	740.17
Monday	-00.096	-80.20	-0.394	-60.49	-0.046	-50.27
Tuesday	-00.053	-40.97	-0.193	-30.44	-0.030	-30.73
Thursday	-00.002	-00.15	-0.076	-10.33	0.009	10.14
Friday	00.025	20.13	-0.164	-20.57	0.051	50.93
Part-time worker	00.026	20.01	-0.479	-60.16	0.076	80.07
Nonworking adult	-00.178	-150.14	-10.258	-200.59	0.014	10.53
Graduate degree	00.143	80.67	0.592	70.54	0.053	40.22
Bachelor's degree	00.129	80.02	0.448	50.98	0.057	40.62
Some college	00.118	70.29	0.306	40.20	0.067	50.43
Hispanic adult	0.051	30.98	0.234	30.12	0.023	20.45
University student	0.108	60.63	0.424	40.38	0.056	40.70
Number of kids*adult	0.089	140.97	0.281	50.63	0.072	160.99
Number of kids*nonworker	0.048	40.24	-0.073	-10.08	0.034	40.06
Income missing	0.041	30.07	0.033	0.50	0.040	30.98
Income $0-30K	-0.040	-20.90	-0.115	-10.86	-0.014	-10.26
Income $150K plus	0.077	50.18	0.319	40.10	0.044	30.97
0-car household	-0.063	-30.01	-0.159	-10.80	-0.031	-10.89
Has a disability	-0.253	-120.18	-0.732	-90.56	-0.074	-40.33
Owns a smartphone	0.086	40.81	0.202	20.61	0.052	30.75
Age 0–4	-0.171	-50.96	-0.743	-50.69	-0.095	-40.29
Age 5–15	-0.106	-40.03	-0.307	-20.46	-0.117	-50.82
Age 16–17	-0.444	-100.71	-10.324	-80.20	-0.274	-80.23
Age 18–24	-0.067	-20.77	0.019	0.14	-0.088	-40.92
Age 25–34	-0.040	-30.31	0.059	0.75	-0.048	-50.46
Age 50–64	-0.037	-30.09	-0.100	-10.40	-0.025	-20.83
Age 65–74	-0.002	-00.15	0.157	10.91	-0.036	-30.11
Age 75 plus	-0.148	-40.83	-0.236	-10.90	-0.086	-30.49
BIAS PARAMETERS						
rSurvey—Age 18–24	-0.249	-40.45	-0.498	-20.11	-0.186	-40.26
rSurvey—Age 25-34	-0.248	-60.36	-0.512	-20.75	-0.215	-70.27

	Model 1 Linear Regression	LN (1+ Number of Linked Trips)	Model 2 Binary Logit	Made 1+ Linked Trips	Model 3 Linear Regression	LN (1+ Number of Linked Trips) > 0 Days Only
rSurvey—Age 35-49	-0.147	-40.74	0.017	0.10	-0.176	-70.66
rSurvey—Age 50-64	-0.060	-20.50	0.196	10.70	-0.105	-50.79
rSurvey—Adult proxy	-0.223	-60.74	-0.527	-40.16	-0.130	-40.82
rMove—Age 16–17 allowed	0.397	50.95	10.216	30.55	0.203	40.03

CALCULATION OF TRIP WEIGHT ADJUSTMENT FACTORS

For each person-day, a trip weight adjustment factor was calculated using Model 1 in Table 34, as follows:

1. Calculate the predicted number of trips from the regression model, keeping all explanatory values at their original values (Predicted_1).
2. Re-calculate the predicted number of trips from the regression model, this time setting all the dummy variables for the six "Bias Parameters" at the bottom of Table 34 to 0 (Predicted_2). This effectively removes the identified biases from the predicted number of trips.
3. Calculate the adjustment factor as the ratio of the two model predictions (= Predicted_2 / Predicted_1).

Table 35 shows the average of the adjustment factors by age group and data/reporting type. The rMove nonproxy data is assumed as the "correct" trip rates, so the adjustment has no effect. For children under age 16, all data is by proxy using similar methods, so there is no "correct" source to adjust to. For the children age 16-17 who reported by proxy, the average adjustment factor is 1.77. For all the adult rSurvey respondents, the average adjustment factor is about 1.10 for nonproxy person-days and 1.35 for proxy person-days. Because most person-days are in the rMove nonproxy column, the overall mean adjustment factor is only 1.02.

TABLE 35: AVERAGE LINKED TRIP RATE ADJUSTMENT FACTORS BY AGE GROUP AND DATA COLLECTION TYPE

AGE	rMOVE-NO PROXY	rMOVE-BY PROXY	rSURVEY-NO PROXY	rSURVEY-BY PROXY	TOTAL
Under 5 years old	--	1.0	--	1.0	1.0
5–15 years	--	1.0	--	1.0	1.0
16–17 years	1.0	1.77	--	1.77	1.52
18–24 years	1.0	--	1.42	1.99	1.07
25–34 years	1.0	--	1.40	2.00	1.03
35–44 years	1.0	--	1.21	1.67	1.01
45–49 years	1.0	--	1.21	1.69	1.02

AGE	rMOVE-NO PROXY	rMOVE-BY PROXY	rSURVEY-NO PROXY	rSURVEY-BY PROXY	TOTAL
50–54 years	1.0	--	1.08	1.52	1.01
55–59 years	1.0	--	1.08	1.49	1.02
60–64 years	1.0	--	1.09	1.51	1.02
65–74 years	1.0	--	1.0	1.38	1.01
75–79 years	1.0	--	1.0	1.40	1.02
80–84 years	1.0	--	1.0	1.43	1.04
85 years or older	1.0	--	1.0	1.46	1.07
Total	**1.0**	**1.03**	**1.10**	**1.35**	**1.02**

Table 36 shows the average trips per weekday by age group and data collection/reporting type after the adjustment factors are applied for each person-day. The values in this table are comparable to those in Table 32 before adjustment. While the average trip rate for the rMove-no proxy data stays the same at 4.82, the average trip rate for the rSurvey nonproxy data has increased from 3.51 to 3.86, and for the rSurvey proxy data has increased from 2.75 to 3.63. A high degree of difference can be seen in the trip rates for the methods even after adjustment, as the analysis indicates that most of the underlying difference is due to differing sociodemographic composition and "lifestyle" indicators (e.g., smartphone ownership, disability) between the users of the two methods.

As a check on the trip rate adjustment procedure, RSG used the same specification as in Model 1 in Table 34 to estimate a model using the adjusted trips per day as the dependent variable. All the bias correction parameters were insignificant, demonstrating that the trip adjustment factors have removed the identified sources of trip rate bias. RSG recommends that the trip rate adjustment factor be used for the trip records in the trip file, in combination with the multiday-adjusted household weight. Table 37 shows the average trip rates by age and data collection type when the multiday-adjusted household weight is also applied to the person-days. The average number of trips/day for the rMove data increases somewhat to 5.08, but the weight of the rMove data decreases due to the multiday adjustment, so the overall trip rate decreases from 4.46 to 4.30 trips per day.

Viable Alternative Trip Rate Correction Methods

One potential weakness of the trip rate adjustment described above is that it can be applied at the trip level, but it does not affect the weights at the person-day level, so there is still a biased percentage of rSurvey travel days with zero trips. It would be possible to also do an adjustment for the person-day weights for the cases with zero trips. This would be like the method described above, but slightly different:

1. Calculate the predicted probability of reporting zero trips from the binary logit model (Model 2 in Table 36), keeping all explanatory values at their original values (Probability_1).

2. For all rSurvey travel days with zero trips, recalculate the predicted probability of reporting 0 trips, this time setting the rSurvey-related "Bias Parameters" at the bottom of Table 34 to zero (Probability_2). This effectively removes the identified biases from the predicted number of trips.
3. Calculate the day-weight adjustment factor as the ratio of the two model predictions (= Probability_2 / Probability_1), and apply that factor *only* to the rSurvey travel days reporting zero trips. The factor will be less than one, effectively weighting down the zero-trip person-days.
4. Sum the results and across the sample to see how many person-days are now "missing" compared to the original number, and re-allocate those person-days proportionally over the rSurvey travel days reporting one or more trips.

This process provides an alternative set of person-day weights that can be used to calibrate the day-pattern models in CT-RAMP. One possible drawback of this procedure is that the revised person-day weights will no longer have the same demographic distribution as the person weights, so it probably best not to use them for other analysis purposes besides calibration of day-pattern models.

TABLE 36: AVERAGE LINKED TRIPS/WEEKDAY, BY AGE GROUP AND DATA COLLECTION/REPORTING TYPE (WITH TRIP RATE ADJUSTMENTS)

AGE	rMOVE-NO PROXY	rMOVE-BY PROXY	rSURVEY-NO PROXY	rSURVEY-BY PROXY	TOTAL
Under 5 years old	--	3.23	--	2.65	3.20
5–15 years	--	3.32	--	3.20	3.31
16–17 years	4.05	4.03	--	4.69	4.13
18–24 years	4.52	--	4.08	4.78	4.48
25–34 years	4.82	--	4.37	4.73	4.79
35–44 years	5.17	--	4.91	4.36	5.16
45–49 years	5.56	--	4.68	4.26	5.48
50–54 years	4.82	--	3.96	3.50	4.73
55–59 years	4.56	--	3.90	4.70	4.47
60–64 years	4.40	--	3.77	3.89	4.30
65–74 years	4.35	--	3.68	4.14	4.19
75–79 years	4.43	--	3.56	3.43	4.03
80–84 years	3.46	--	3.41	3.37	3.42
85 years or older	4.02	--	2.48	1.93	2.72
Total	**4.82**	**3.33**	**3.86**	**3.63**	**4.46**

TABLE 37: AVG. LINKED TRIPS/WEEKDAY, BY AGE GROUP AND DATA COLLECTION/REPORTING TYPE (ADJUSTED & WEIGHTED)

AGE	rMOVE-NO PROXY	rMOVE-BY PROXY	rSURVEY-NO PROXY	rSURVEY-BY PROXY	TOTAL
Under 5 years old	--	3.59	--	2.33	3.30
5–15 years	--	3.26	--	3.22	3.25
16–17 years	3.90	3.46	--	4.28	3.94
18–24 years	4.67	--	4.05	5.65	4.56
25–34 years	5.14	--	3.98	6.14	4.96
35–44 years	5.53	--	4.75	3.20	5.28
45–49 years	5.96	--	4.55	3.20	5.45
50–54 years	5.20	--	4.30	3.66	4.90
55–59 years	4.65	--	3.69	4.06	4.20
60–64 years	4.14	--	3.36	3.91	3.72
65–74 years	4.28	--	3.30	3.57	3.67
75–79 years	2.92	--	3.34	2.18	3.06
80–84 years	3.20	--	3.17	2.64	3.11
85 years or older	2.53	--	2.05	1.08	1.98
Total	**5.08**	**3.36**	**3.76**	**3.53**	**4.30**

Comparisons on Weighted and Adjusted Trip Distributions Between Data Collection Types

RSG then applied the weights calculated to examine at the resulting distributions of trips and activities between the two data types. The weight used considered the following:

- Demographics at the household level and person level by PUMA (hhnewwt_456x).
- Multiweekday factors for the rMove data at the person-day level (multiday_weight_456x).
- Trip rate correction factors at the person-day level, applied at the trip level (adjusted_multiday_linkedtripweight_456x).

First, RSG summarized the activity purpose codes into origin and destination purpose categories to be as consistent as possible between the rMove and rSurvey data. Table 38 shows the number of weighted average weekday linked trips in each category for each data type, in terms of both absolute numbers and percentages.

TABLE 38: DISTRIBUTION OF LINKED TRIPS, BY DESTINATION PURPOSE CATEGORY

PURPOSE	rMOVE	rSURVEY	TOTAL	rMOVE	rSURVEY	TOTAL
Home	2,414,571	1,330,451	3,745,022	28.2%	33.3%	29.8%
Work	936,052	362,975	1,299,027	10.9%	9.1%	10.3%
Work-related	487,553	85,317	572,870	5.7%	2.1%	4.6%
School	229,644	230,629	460,273	2.7%	5.8%	3.7%
Escort	1,307,324	333,634	1,640,958	15.3%	8.4%	13.1%
Shop	776,221	368,248	1,144,469	9.1%	9.2%	9.1%
Meal	685,083	178,435	863,518	8%	4.5%	6.9%
Social/recreation	799,221	329,387	1,128,608	9.3%	8.2%	9%
Errand/other	809,757	480,822	1,290,579	9.5%	12%	10.3%
Change Mode	119,276	294,404	413,680	1.4%	7.4%	3.3%
Total	**8,564,702**	**3,994,302**	**12,559,004**	**100%**	**100%**	**100%**

In general, the patterns do not look much different across the data types, but there are several differences that could probably be addressed through further data processing and correction:

- Many trips include destination purpose coded as "other" with open-ended text answers. Many of these can be recoded to other answer categories.
- The trips are unlinked in the data, so even though the transit access and egress trips are not included in this table, there are still many "change mode" trips. When the trips are linked together more formally, most of these change mode activities will disappear and the transit trips will get the correct destination purposes for the linked trip.
- Many "drop-off" escort trips in the rMove data have long durations of stay, suggesting that the person who was dropped off was also given this activity purpose, when that person did something else after they were dropped off there. This might also help explain the low percentage of school trips in the rMove data. (A check needs to be done that children who were dropped off at school were given the purpose "school" and not the purpose "drop off," and similar checks for other imputed child trips.)
- The rMove data has more work-related and meal trips. This may be a function of the different demographics of the rMove users (more workers, higher incomes, younger ages, more active lifestyles), but could also be that rSurvey users tend to under-report such trips.

Table 39 compares the two data types by duration of stay at the destination activity. The rSurvey data has a lower percentage of short stops of less than five minutes, and a higher percentage of trips that are the last trip of the day (rSurvey) or a long overnight stay at home (rMove). Again, some further work needs to be done to make the trips from the methods more comparable:

- As stated above, more comprehensive trip linking analysis to merge the unlinked transit trips consistently and reduce effects of the "change mode" trips.
- Consistent treatment of the first, last, and overnight activities in the multiday rMove data and single-day rSurvey data. (Transition from a trip-based record format to a place-based record format, with a record starting at 3:00 a.m. each travel day and a record ending at 3:00 a.m. each travel day would make the two data types more consistent. A day with no travel would just have a single location record with no trip and a 24-hour duration of stay.)

TABLE 39: DISTRIBUTION OF LINKED TRIPS, BY DESTINATION DURATION OF STAY CATEGORY

DURATION	rMOVE	rSURVEY	TOTAL	rMOVE	rSURVEY	TOTAL
<5 min	1,613,691	539,102	2,152,793	18.8%	13.5%	17.1%
5–15 min	1,034,943	443,935	1,478,878	12.1%	11.1%	11.8%
15–30 min	704,806	327,238	1,032,044	8.2%	8.2%	8.2%
30–60 min	828,313	400,493	1,228,806	9.7%	10%	9.8%
1–2 hrs.	956,998	376,025	1,333,023	11.2%	9.4%	10.6%
2–4 hrs.	770,324	335,267	1,105,591	9%	8.4%	8.8%
4–8 hrs.	629,274	318,387	947,661	7.3%	8%	7.5%
>8 hrs.	491,574	262,352	753,926	5.7%	6.6%	6%
last trip/overnight	1,534,777	991,504	2,526,281	17.9%	24.8%	20.1%
Total	**8,564,700**	**3,994,303**	**12,559,003**	**100%**	**100%**	**100%**

Table 40 compares the trips by origin-destination types across the two data types, with home-based work or school, home-based other, non-home-based work, and non-home-based other. The rMove data include more non-home-based trips, but the same data issues that are described above for Table 38 will also affect this analysis, so this should be redone after further data recoding.

TABLE 40: DISTRIBUTION OF LINKED TRIPS, BY ORIGIN-DESTINATION PURPOSE CATEGORY

O-D TRIP TYPE	rMOVE	rSURVEY	TOTAL	rMOVE	rSURVEY	TOTAL
HB work/school	1,215,027	876,716	2,091,743	14.2%	21.9%	16.7%
HB other	3,417,226	1,756,594	5,173,820	39.9%	44.0%	41.2%
NHB work	944,893	232,057	1,176,950	11.0%	5.8%	9.4%
NHB other	2,987,556	1,128,934	4,116,490	34.9%	28.3%	32.8%
Total	**8,564,702**	**3,994,301**	**12,559,003**	**100.0%**	**100.0%**	**100.0%**

Finally, Table 41 shows the weighted mode share for the two data sources, not including the unlinked transit access and egress trips. The most striking difference is the higher transit mode share for the rSurvey data. Some simple mode choice modeling has indicated that this difference is primarily due to the different demographics of the respondents for the two methods, with more low-income, zero-vehicle households using rSurvey.

TABLE 41: DISTRIBUTION OF LINKED TRIPS, BY MODE CATEGORY

MODE TYPE	rMOVE	rSURVEY	TOTAL	rMOVE	rSURVEY	TOTAL
Other	81,665	14,987	96,652	1.0%	0.4%	0.8%
Walk	657,681	417,577	1,075,258	7.7%	10.5%	8.6%
Bike	59,888	49,708	109,596	0.7%	1.2%	0.9%
Car	7,564,153	3,190,249	10,754,402	88.3%	79.9%	85.6%
Taxi/TNC	32,079	13,838	45,917	0.4%	0.3%	0.4%
Transit	160,937	286,821	447,758	1.9%	7.2%	3.6%
School bus	8,297	21,122	29,419	0.1%	0.5%	0.2%
Total	**8,564,700**	**3,994,302**	**12,559,002**	**100%**	**100%**	**100%**

OPPORTUNITIES FOR FURTHER ANALYSIS

RSG recommends conducting further comparisons between the trip data from the two data collection methods. Further, any trip rate adjustment should occur *after* addressing the potential data improvements. These improvements primarily include the following: 1) recoding important open-ended responses; 2) checking for correct purpose coding of imputed trips and escort trips, particularly "drop-off" trips for children; 3) creating a version of the data with linked transit trips; and 4) possibly reformatting the data into a "place-based" record format typical for one-day travel diary data and most useful for creating inputs for tour-level and day-pattern models.

APPENDIX A. MAP OF THE STUDY REGION BY MSA AND PUMA