



## **SOUTH SOUND TRAVEL STUDY: JBLM SURVEY**

### **Survey Methodology Report**

## **SURVEY METHODOLOGY**

### **SURVEY PURPOSE**

RSG and ETC (market research firms) conducted the South Sound Travel Study on behalf of the Thurston Regional Planning Council (TRPC) in fall 2013. The main part of this study collected travel behavior data from a random sample of households throughout the region and the results are included in a summary report “South Sound Travel Study: Household Survey Report”. In addition to the household survey, TRPC required more information about trips to and from Joint Base Lewis-McChord (JBLM), the military base located in southern Pierce County. JBLM residents and employees make up a significant portion of traffic in the congested I-5 corridor between Olympia and Tacoma. The JBLM “special generator” survey was conducted in November and December 2013 to collect travel data specific to the base in addition to the data collected in the main household survey.

The JBLM survey was similar to the household survey in many ways, particularly with regard to the questionnaire design. This memo provides an overview of the JBLM survey design and administration methodology, highlighting some of the differences from the household survey methodology. It is a supplement to the main household survey report and refers to details provided in that report when similarities exist.

### **SAMPLING**

Unlike the household survey’s stratified address-based sampling approach, the JBLM survey invited individual people identified through participation in a separate survey conducted by the South Sound Military and Communities Partnership (SSMCP) in October 2013. Respondents who completed the SSMCP “Community Needs Survey” were asked if they would be willing to volunteer for future surveys. Those who volunteered and provided a valid email address were then invited to participate in TRPC’s South Sound JBLM survey.

This “convenience” sample method was used for the JBLM survey for a few reasons. One reason was that it simplified the process of obtaining contact email addresses. SSMCP had already secured permissions from the US Department of Defense (DoD) to invite JBLM personnel to the SSMCP survey. Therefore, RSG and TRPC did not need to obtain similar permissions from the military to use the resulting list of volunteers. The convenience sampling approach also helped minimize costs for the South Sound survey because all invitations and other study communications could be sent via email. Additionally, because SSMCP was a partner for the South Sound Travel Study and regularly supports collaboration across multiple agencies and organizations, JBLM respondents were likely to recognize the organization as a trusted partner and be more comfortable responding.

At the close of the SSMCP survey, approximately 53% of the respondents volunteered for future surveys, but only about half of these volunteers provided a unique email address in a valid format. After removing invalid and duplicate email addresses, the final sample size available to invite to the South Sound JBLM survey was just over 1,600 people. The total number of SSMCP survey respondents and the final number of volunteers invited to the South Sound JBLM survey are shown below.

**Table 1: JBLM Survey Sample Size**

Portion of JBLM Population	# People	%
Appx. # Invited to SSMCP Community Needs Survey	45,000	
Complete SSMCP Survey Respondents	5,670	12.6%
SSMCP Survey Volunteers	2,940	6.5%
Volunteers with Unique, Valid Email Addresses (Invited to South Sound JBLM Survey)	1,666	3.7%
Email Bounce-backs	28	0.1%
Final South Sound JBLM Sample Size	1,638	3.6%

## SURVEY DESIGN

As previously noted, the JBLM survey was similar to the household survey for most questions and for the overall design of the survey. Two notable differences in the JBLM questionnaire design included:

- Only asking one individual to complete the diary (instead of an entire household)
- Asking participants to report their travel activities for “yesterday” (the most recent weekday before they started the survey, instead of for a pre-assigned “travel date”)

To adjust the survey for these differences, a few household demographic questions were modified to collect some household data (such as household size and composition) instead of asking for detailed information about each household member. Also, because the “travel date” was “yesterday”, the respondent did not need to wait for a specific date to report their trips, so the survey could continue seamlessly from the demographic information section into the trip section. More specifically, if a respondent took the survey on a Sunday or Monday, they were asked to report their travel for the previous Friday (e.g. the most recent weekday). Otherwise, as stated, respondents completing the survey on other days were asked to answer the survey for “yesterday.”

Other minor questionnaire changes included a few new questions and answer options to collect certain details specific to the military base, such as

- The branch active military respondents served in
- Years of service at JBLM
- Military-related trip purposes
- Which JBLM gates were used during trips



Asking about the JBLM gates used provided important location details because respondents were instructed to only report when they entered and exited the base rather than provide specific details about on-base destinations. In part, this helped allow some flexibility in the survey for respondents who might not want or be able to report all the details of their military activities for security or privacy reasons. Additionally, because TRPC's focus is on travel to and from the base rather than between on-base locations, the JBLM gate locations used provided sufficient detail.

The majority of the other questions, including trip details, employment demographics, and the long-distance travel diary, were identical to those in the household survey. The final JBLM questionnaire and screenshots of the final online survey tool can be found in the appendix.

## ADMINISTRATION

**Email Invitations:** The JBLM survey was administered between November 7 and December 29, 2013. Participants were invited to the survey with email invitations, followed by 2-3 email reminders. The emails included introductory information about the survey and study purpose, the study link and a unique password, and contact information for questions including the study's "reply-to" email address and call center phone number. Example screenshots of these emails can be found in Appendix J3.

After processing the list of survey volunteers, RSG sent the first invitation to approximately a third of the respondents. The invitations were split into two groups in part to help spread responses out over several days. (Unlike the household survey respondents who were each assigned a specific "travel day", JBLM respondents were asked to describe their travel activities for "yesterday" (the day before they began the survey), so spreading out invitations and responses would help collect samples over a greater number of "travel days".) Also, inviting fewer respondents initially can help minimize response rate impacts due to any unknown factors (much like a pilot survey). The final schedule of invitation and reminder emails to each wave is shown below:

**Table 2: Schedule of Email Invitations and Reminders**

Email	Wave 1	Wave 2
Invitation	7 November 2013	11 December 2013
Reminders	20 November 2013	17 December 2013
	11 December 2013	
	17 December 2013	
Final Reminder	20 December 2013	20 December 2013

**Respondent Communication:** Over the course of the JBLM survey, RSG monitored the "help" email address daily and responded to inquiries. Between November 7 and December 29, RSG responded to 21 emails. The majority of the emails were related technical (including the initial difficulty of accessing the survey from an on-base computer as well as the common difficulty of using the mapping tool). A few other emails related to privacy concerns from respondents who preferred not to provide personal details and locations for homes and certain destinations. ETC's call center was also open during the usual hours for the duration of the survey to answer



questions and help respondents complete the survey over the phone if requested, but ETC did not make any outbound calls to recruit respondents.

**Survey Incentives:** As an incentive to help encourage response, JBLM survey participants were offered the opportunity to enter a raffle for an Apple iPad. A small number of respondents opted out of this raffle at the end of the survey, but the majority of complete respondents entered their name into the raffle. A winner from DuPont, WA was randomly drawn after the survey closed.



## SUMMARY OF RESPONSES

This section provides a brief summary of responses to the JBLM survey. Only fully complete responses were provided in the final dataset and are discussed here.

The survey opened on November 7, 2013 and closed on December 29, 2013. During that time, a total of 163 respondents completed the survey, reporting 636 travel day trips and 193 long-distance trips.

**Table 3: JBLM Survey Responses**

Response Segment	Count	Notes
Invitations	1,666	
Complete Responses	163	9.8% response rate
Reported Travel Day Trips	636	4.1 trips/person (for 156 respondents reporting any trips)
Reported Long-Distance Trips	193	1.7 "past-month" long-distance trips/person (for 85 respondents reporting past-month trips)
"Past month" trips	144	
"Past year" trips	49	

## DEMOGRAPHIC DATA

More of the JBLM respondents came from larger households than in the household survey (likely due to the lower respondent burden of the individual survey). No respondents were from 0-vehicle households.

**Table 4: Household Size and Vehicle Ownership**

# Vehicles	0 Vehicles	1 Vehicle	2 Vehicles	3+ Vehicles	TOTAL
<b>HH Size</b>					
1 person HH	0 (0%)	13 (8%)	10 (6%)	6 (4%)	<b>29 (18%)</b>
2 person HH	0 (0%)	7 (4%)	29 (18%)	15 (9%)	<b>51 (31%)</b>
3 person HH	0 (0%)	1 (0.6%)	11 (7%)	12 (7%)	<b>24 (15%)</b>
4+ person HH	0 (0%)	0 (0%)	26 (16%)	33 (20%)	<b>59 (36%)</b>
<b>TOTAL</b>	<b>0 (0%)</b>	<b>21 (13%)</b>	<b>76 (47%)</b>	<b>66 (41%)</b>	<b>163 (100%)</b>

JBLM respondents also tended to have higher incomes than household survey respondents, with less than 5% in the low-income group.

**Table 5: Household Income**

Income	Count	Percent
Under \$35,000	6	4%
\$35,000-\$74,999	45	28%
\$75,000-\$99,999	48	29%
\$100,000 or more	56	34%
Prefer not to answer	8	5%
<b>TOTAL</b>	<b>163</b>	<b>100%</b>



Slightly less than half of the respondents were “active duty” (the majority in the Army), and almost a third were civilian staff for the DoD.

**Table 6: Respondent Military Affiliation**

Military Affiliation	Count	Percent
Active duty	68	42%
Department of Defense Civilian workforce	47	29%
Spouse/Partner (of a service-member)	19	12%
Military veteran	14	9%
Reserve or National Guard	7	4%
Contract worker	5	3%
Other	3	2%
<b>TOTAL</b>	<b>163</b>	<b>100%</b>

**ONE-WEEKDAY TRAVEL DIARY DATA**

As with the household survey, approximately a third of trips were going home. A larger proportion of trips were made to work. Note that only adults completed the JBLM survey, while the household survey included children and their trips.

**Table 7: Primary Trip Purpose**

Purpose	Count	Percent
Go home	216	34%
Go to primary workplace	147	23%
Go to other shopping (e.g., mall, pet store)	48	8%
Drop-off/pick-up someone (e.g., son at friend's house, spouse at bus stop)	37	6%
Go grocery shopping	31	5%
Go to restaurant to eat/get take-out	29	5%
Conduct personal business (e.g. bank, post office)	25	4%
Go to school/daycare (e.g., daycare, K-12, college)	21	3%
Go to other work-related place (e.g., meeting, second job, delivery)	19	3%
Other	16	3%
Attend social event (e.g. visit with friends, family, co-workers)	12	2%
Go exercise (e.g., gym, walk, bike ride)	11	2%
Go to medical appointment (e.g. doctor, dentist)	8	1%
Go to religious/community/volunteer activity	7	1%
Conduct military business (e.g. training)	6	0.9%
Attend recreational event (e.g., movies, sporting event)	3	0.5%
<b>TOTAL</b>	<b>636</b>	<b>100%</b>



The majority of trips in the JBLM diaries (99%) were vehicle trips (drive-alone, carpool or vanpool); no trips were made by transit.

**Table 8: Primary Trip Mode**

Mode	Count	Percent
Drove Alone (auto/truck)	484	76%
Drove/rode with household members or others (carpool)	131	21%
Vanpool	11	2%
Other	5	0.8%
Walk	4	0.6%
Motorcycle	1	0.2%
Bike, Bus, Rail, Taxi, Paratransit, Veteran or Senior Transportation	0	0
<b>TOTAL</b>	<b>636</b>	<b>100%</b>

Slightly more than half of the trips went through one of the many gates to the base. The most frequently used gates were Dupont and Madigan.

**Table 9: Last JBLM Gate Used**

Gate	Count	Percent
Did not go through any JBLM gates on this trip	290	46%
Dupont Gate	70	11%
Madigan Gate (MAMC)	52	8%
D Street Gate	35	6%
McChord Field Main Gate	32	5%
East Gate	23	4%
41st Division Gate (JBLM-Lewis North)	23	4%
Logistics Center Gate	19	3%
Liberty Gate (JBLM-Lewis Main Visitor Gate)	18	3%
Center Drive Gate	15	2%
McChord Field Barnes Gate	11	2%
Mounts Road Gate	10	2%
McChord Field Woodbrook Housing Gate	9	1%
Transmission Line Gate	8	1%
Rainier Gate	8	1%
Other gate	6	0.9%
Camp Murray Gate	6	0.9%
I Street Gate	1	0.2%
Scouts Out Gate	0	0%
<b>TOTAL</b>	<b>636</b>	<b>100%</b>



**LONG-DISTANCE DIARY DATA**

Unlike in the household diary, respondents were given the option to skip the long-distance section of the diary. This was again due to anticipated concerns about reporting of military travel to secure locations (such as Afghanistan or Germany).

Similar to the household diary, just over half of the long-distance trips reported from the past month were “day trips. Just over a quarter of trips were short overnight trips (compared to about a third of household survey trips).

**Table 10: Number of Nights Away on Long-Distance Trip (Past-Month Only)**

# Nights	Count	Percent
0 nights (day-trip)	80	56%
1-3 nights	40	28%
4-7 nights	18	13%
8+ nights	6	4%
<b>TOTAL</b>	<b>144</b>	<b>100%</b>

Also similar to the household survey, the majority of JBLM long-distance trips were made for social or recreational purposes. In contrast to household respondents, though, very few JBLM respondents reported making any long-distance business trips during the past month or year.

**Table 11: Primary Long-Distance Trip Purpose (First or Primary Destination, All Trips)**

Purpose	Count	Percent
Social (visit family/friends)	75	39%
Recreational (hiking, sporting event, etc.)	70	36%
Personal business	15	8%
Other	14	7%
Military business (training, etc)	7	4%
Commute to/from work	7	4%
Company business (meeting, sales call, etc.)	5	3%
<b>TOTAL</b>	<b>193</b>	<b>100%</b>

The majority of JBLM long-distance trips were made by personal vehicle, and no trips were made by train.



**Table 12: Primary Long-Distance Travel Mode (First Leg of Trip, Past-Month Only)**

<b>Mode</b>	<b>Count</b>	<b>Percent</b>
Personal vehicle	124	86%
Airplane	10	7%
Rented vehicle	7	5%
Bus/motor coach	2	1%
Other (e.g. bike)	1	0.7%
Company vehicle, Train	0	0%
<b>TOTAL</b>	<b>144</b>	<b>100%</b>



## **APPENDICES**

The appendices for the JBLM survey include:

- J1. Questionnaire
- J2. Survey Screenshots
- J3. Example Invitation and Reminder Email Screenshots

