FBRMPO Regional Household Travel Survey Results

FBRMPO Model Travel Survey Data

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FBRMPO Travel Survey Data

- Household Travel Survey
- RV Park Visitor Survey
- On-Board Transit Survey
- Mobile Phone Location Data Survey
FBRMPO Travel Survey Data

- Household Travel Survey
- RV Park Visitor Survey
- On-Board Transit Survey
- Mobile Phone Location Data Survey
Household Survey – Overview

- Late spring 2013
- Target Sample – 1300 households
- Final Sample – 1434 usable household records
- Stratified random sample (stratified by County)

Target Stratification
- Household size by workers
- Household size by vehicles
- Workers by vehicles
- Household size by income
- Workers by income
Household Survey – Overview

- Participants recruited by mail
- Mixed mode survey – multiple options for participating

Process
- Mailed invitation to participate
- 2 reminder postcards
- Self recruit on-line or via phone call
- Travel could be reported via web, phone call, or mailing back travel logs
### Western North Carolina Household Travel Survey

**Study sponsored by:** 
French Broad River MPO  
North Carolina Department of Transportation

**Questions?**  
www.wncroadsurvey.com  
Toll-free hotline: 1-866-436-7828

**Travel Log For:**

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### FOR EACH PLACE YOU VISIT: What is this PLACE?

**If it is an "Other Place" or Transit Stop, tell us the:**
1. Place Name
2. Address and City - provide what you can.

*Record each bus stop as it's own PLACE.

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### What TIME did you ARRIVE? (Record exact time)

### HOW did you travel to this place?

### Which vehicle did you use (if Auto/Truck)?

### Other than yourself, HOW MANY people were on this trip?

### What TIME did you LEAVE? (Record exact time)

### What did you DO there? List ALL activities you did.

### What Cross Streets are nearest to the place where you parked?

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**Please pick the option that best describes where you parked:**

<table>
<thead>
<tr>
<th>Surface parking lot</th>
<th>Parking garage</th>
<th>On-Street</th>
<th>Driveway</th>
<th>Residential Garage</th>
<th>Other:</th>
</tr>
</thead>
</table>

---

**Tell us WHAT you DID at place 1 and what TIME you left:**

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### Place 1:

**Place 1:**  
- My Home  
- My Work  
- My School  
- Transit Stop  
- Other Place

**Place name and Address:**

- Walk  
- Bicycle  
- Auto/Truck  
- Bus/Transit  
- Vanpool  
- Other:

- am  
- pm

---

### Place 2:

**Place 2:**  
- My Home  
- My Work  
- My School  
- Transit Stop  
- Other Place

**Place name and Address:**

- Walk  
- Bicycle  
- Auto/Truck  
- Bus/Transit  
- Vanpool  
- Other:

- am  
- pm

**# of people with you:**

- Who?

---

### Place 3:

**Place 3:**  
- My Home  
- My Work  
- My School  
- Transit Stop  
- Other Place

**Place name and Address:**

- Walk  
- Bicycle  
- Auto/Truck  
- Bus/Transit  
- Vanpool  
- Other:

- am  
- pm

**# of people with you:**

- Who?

---

### Place 4:

**Place 4:**  
- My Home  
- My Work  
- My School  
- Transit Stop  
- Other Place

**Place name and Address:**

- Walk  
- Bicycle  
- Auto/Truck  
- Bus/Transit  
- Vanpool  
- Other:

- am  
- pm

**# of people with you:**

- Who?

---

### Place 5:

**Place 5:**  
- My Home  
- My Work  
- My School  
- Transit Stop  
- Other Place

**Place name and Address:**

- Walk  
- Bicycle  
- Auto/Truck  
- Bus/Transit  
- Vanpool  
- Other:

- am  
- pm

**# of people with you:**

- Who?

---

### Activity List

Pick the code from the list below that best describes the activity you did at each place and write the code in column G of each place.

*For transit stops or carpool/vanpool meeting places: Please record your activity as "Transferred".*

<table>
<thead>
<tr>
<th>Code</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Working at home (for pay or volunteer)</td>
</tr>
<tr>
<td>02.</td>
<td>Shopping (on-line, catalog, or by phone)</td>
</tr>
<tr>
<td>03.</td>
<td>Any other activities at home</td>
</tr>
<tr>
<td>04.</td>
<td>Change travel mode/transfer (from car to bus/train, walk to bus/train, etc)</td>
</tr>
<tr>
<td>05.</td>
<td>Drop off passenger from car</td>
</tr>
<tr>
<td>06.</td>
<td>Pick up passenger from car</td>
</tr>
<tr>
<td>07.</td>
<td>Drive through (ATM, bank, fast food, etc)</td>
</tr>
<tr>
<td>08.</td>
<td>Work/don my job</td>
</tr>
<tr>
<td>09.</td>
<td>Other work-related activities at work</td>
</tr>
<tr>
<td>10.</td>
<td>Volunteer work/activities</td>
</tr>
<tr>
<td>11.</td>
<td>Attending class/studying</td>
</tr>
<tr>
<td>12.</td>
<td>All other activities at school (eat lunch, recreational, etc)</td>
</tr>
<tr>
<td>13.</td>
<td>Work related (meeting, sales call, or delivery)</td>
</tr>
<tr>
<td>14.</td>
<td>Service private vehicle (getting gas, oil, tube, repairs)</td>
</tr>
<tr>
<td>15.</td>
<td>Grocery/food shopping</td>
</tr>
<tr>
<td>16.</td>
<td>Other routine shopping (clothing, convenience, household maintenance)</td>
</tr>
<tr>
<td>17.</td>
<td>Shopping for major purchases or specialty items (appliances, electronics, new vehicle, major household repairs, etc)</td>
</tr>
<tr>
<td>18.</td>
<td>Household errands (bank, dry cleaning, etc)</td>
</tr>
<tr>
<td>19.</td>
<td>Health care (doctor, dentist, etc)</td>
</tr>
<tr>
<td>20.</td>
<td>Personal business (visit government office, attorney, accountant)</td>
</tr>
<tr>
<td>21.</td>
<td>Eat meal out at restaurant/diner</td>
</tr>
<tr>
<td>22.</td>
<td>Civic or religious activities</td>
</tr>
<tr>
<td>23.</td>
<td>Indoor recreation (yoga, gym, etc) or outdoor recreation (jogging, biking, walking)</td>
</tr>
<tr>
<td>24.</td>
<td>Attend major sporting event</td>
</tr>
<tr>
<td>25.</td>
<td>Soc ia/visit friends/relatives</td>
</tr>
</tbody>
</table>

---

**Continue with Places 6-12 on back**
<table>
<thead>
<tr>
<th>PLACE 6</th>
<th>Place name and Address:</th>
<th>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</th>
<th>□ am □ pm</th>
<th># of people with you: ___ □ Did not leave</th>
<th>□ am □ pm</th>
<th>Refer to the list of activities on page 1 and record the code(s) here</th>
<th>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</th>
<th>Please pick the option that best describes where you parked:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLACE 7</td>
<td>Place name and Address:</td>
<td>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</td>
<td>□ am □ pm</td>
<td># of people with you: ___ □ Did not leave</td>
<td>□ am □ pm</td>
<td>Refer to the list of activities on page 1 and record the code(s) here</td>
<td>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</td>
<td></td>
</tr>
<tr>
<td>PLACE 8</td>
<td>Place name and Address:</td>
<td>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</td>
<td>□ am □ pm</td>
<td># of people with you: ___ □ Did not leave</td>
<td>□ am □ pm</td>
<td>Refer to the list of activities on page 1 and record the code(s) here</td>
<td>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</td>
<td></td>
</tr>
<tr>
<td>PLACE 9</td>
<td>Place name and Address:</td>
<td>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</td>
<td>□ am □ pm</td>
<td># of people with you: ___ □ Did not leave</td>
<td>□ am □ pm</td>
<td>Refer to the list of activities on page 1 and record the code(s) here</td>
<td>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</td>
<td></td>
</tr>
<tr>
<td>PLACE 10</td>
<td>Place name and Address:</td>
<td>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</td>
<td>□ am □ pm</td>
<td># of people with you: ___ □ Did not leave</td>
<td>□ am □ pm</td>
<td>Refer to the list of activities on page 1 and record the code(s) here</td>
<td>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</td>
<td></td>
</tr>
<tr>
<td>PLACE 11</td>
<td>Place name and Address:</td>
<td>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</td>
<td>□ am □ pm</td>
<td># of people with you: ___ □ Did not leave</td>
<td>□ am □ pm</td>
<td>Refer to the list of activities on page 1 and record the code(s) here</td>
<td>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</td>
<td></td>
</tr>
<tr>
<td>PLACE 12</td>
<td>Place name and Address:</td>
<td>□ Walk □ Bicycle □ Auto/Truck □ Bus/Transit □ Vanpool □ Other:</td>
<td>□ am □ pm</td>
<td># of people with you: ___ □ Did not leave</td>
<td>□ am □ pm</td>
<td>Refer to the list of activities on page 1 and record the code(s) here</td>
<td>□ Surface parking lot □ Parking garage □ On-Street □ Driveway □ Residential Garage □ Other:</td>
<td></td>
</tr>
</tbody>
</table>
Western North Carolina
HOUSEHOLD TRAVEL SURVEY

Dear Resident,

Western North Carolina is on the move, and we need your help to ensure that our transportation system keeps up with growing demands. The French Broad River Metropolitan Planning Organization (FBRMPO) is working closely with the North Carolina Department of Transportation to help improve roads, public transit, sidewalks, and bicycle routes in our region. Our goal is to increase safety and reliability while keeping pace with our community’s growth.

To help us better understand your transportation needs and experiences, we are working with Westat—a reputable and trusted national research firm—and are asking select households like yours to participate in a special study about daily travel in the Western North Carolina region. This study is voluntary, and your personal information will be kept confidential as required by law.

Why should you participate? Good transportation facilities and services help the people in your household access jobs, schools, healthcare, and other important daily activities. To keep our region moving, we need data on how, when, where, and why people travel. This information helps leadership make important decisions about how and where to invest your federal and state transportation dollars.

What are we asking of you? Three simple steps:
1. Logon to www.wnrtravelsurvey.com and complete the Household Questionnaire. Your household’s PIN is [PIN].
2. Record the travel of each member of your household for a 24-hour period in personalized travel diaries that we will send you.
3. Provide the travel diary information to us on the same website.

All households that complete these surveys online will receive a $10 thank you for your help. If you do not have internet access you are welcome to visit the French Broad River MPO offices where we will provide you with tools you need to complete the study online. Please contact MPO staff at mpo@landofsky.org or by calling 828-251-7444 to set up an in-person appointment.

If you would prefer to speak with one of our highly trained interviewers, you can reach them toll-free at 1-866-436-7828. To learn more about this study, please visit www.wnrtravelsurvey.com.

Thank you for your participation and for helping make our region a better place to live, work, and play — your input will really make a difference.

Signed,

[Signature]
Jim Davis, Chair, FBRMPO TAC
We need YOU!

Please help the French Broad River Metropolitan Planning Organization and North Carolina DOT improve roads, public transit, sidewalks and bicycle routes in your community.

Your participation in the Western North Carolina Household Travel Survey will help us better understand transportation needs as our community continues to grow and change.

A few days ago, we sent you a letter asking for your participation in this important survey. If you have already responded to our online survey, thank you! If not, there’s still time.

Please visit our study website at www.wnctravelsurvey.com and enter your PIN to begin the survey. Your PIN is located under your address on the other side of this card.

Questions? Please email wnctravelsurvey@westat.com or call 1-866-436-7828.

Sponsored by French Broad River MPO and NCDOT
Household Survey – Data Collected

- **Household Data**
  - Residence type
  - Owner/renter status
  - HH Size
  - HH Income
  - HH Vehicles
  - Number of Bicycles

- **Vehicle Data**
  - Make/Model
  - Year
  - Fuel Type
  - Ownership Status

- **Person Data**
  - Age
  - Gender
  - Disability Status
  - Licensed Driver Status
  - Employment Status
  - Student Status

- **Trip Data**
  - Start/End Locations
  - Start/End Times
  - Mode of Travel
  - Activities
Household Survey – Findings

Average Trip Rates

- Trips/HH: 7.88 (FBRMPO) vs. 9.7 (NHTS)
- Trips/Person: 3.89 (FBRMPO) vs. 3.79 (NHTS)
Household Survey – Findings

Activities

- Other
- Social/Rec
- Shopping
- Work Related Business
- To/From Work

NHTS
FBRMPO
Household Survey – Findings

Average Trip Length

<table>
<thead>
<tr>
<th></th>
<th>FBRMPO</th>
<th>NHTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>10.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Shopping</td>
<td>6.7</td>
<td>6.5</td>
</tr>
<tr>
<td>School</td>
<td>4.7</td>
<td>6.3</td>
</tr>
<tr>
<td>Other</td>
<td>8.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Total</td>
<td>8.6</td>
<td>9.7</td>
</tr>
</tbody>
</table>
Household Survey – Findings

FBRMPO Mode to Work

- Auto: 91%
- Transit: 2%
- Walk: 5%
- Other: 2%

NHTS Mode to Work

- Auto: 89%
- Transit: 5%
- Walk: 3%
- Other: 3%
Household Survey – Findings

### Average Trip Rates by HH Income

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Average Trip Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>$150,000 or More</td>
<td>12.16</td>
</tr>
<tr>
<td>$100,000 – $149,999</td>
<td>9.68</td>
</tr>
<tr>
<td>$75,000 – $99,999</td>
<td>9.68</td>
</tr>
<tr>
<td>$60,000 – $74,999</td>
<td>9.14</td>
</tr>
<tr>
<td>$50,000 – $59,999</td>
<td>8.14</td>
</tr>
<tr>
<td>$30,000 – $49,999</td>
<td>7.52</td>
</tr>
<tr>
<td>$20,000 – $29,999</td>
<td>6.63</td>
</tr>
<tr>
<td>$10,000 – $19,999</td>
<td>5.19</td>
</tr>
<tr>
<td>Less than $10,000</td>
<td>4.62</td>
</tr>
</tbody>
</table>
Household Survey – Findings

Average Trip Length by Mode

<table>
<thead>
<tr>
<th>Mode</th>
<th>HBW</th>
<th>HBO</th>
<th>HBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive</td>
<td>9.5</td>
<td>7.3</td>
<td>6.0</td>
</tr>
<tr>
<td>Walk</td>
<td>2.0</td>
<td>2.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Bike</td>
<td>5.1</td>
<td>2.9</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Household Survey – Findings

<table>
<thead>
<tr>
<th>Trip Purpose</th>
<th>Full Time Households</th>
<th>Seasonal Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBS</td>
<td>1.9</td>
<td>1.6</td>
</tr>
<tr>
<td>HBO</td>
<td>3.4</td>
<td>2.6</td>
</tr>
<tr>
<td>NHB</td>
<td>2.9</td>
<td>4.3</td>
</tr>
</tbody>
</table>
RV Survey – Overview

- July 2013
- Sample – 70 RV households
- In-person, retrospective survey

Statistics
- 61.4% at least one month
- 35.6% less than a month
- 3% unsure
## RV Survey – Trip Summary Table

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Places</td>
<td>252</td>
</tr>
<tr>
<td>Number of Trips</td>
<td>182</td>
</tr>
<tr>
<td>Number of Respondents</td>
<td>70</td>
</tr>
<tr>
<td>Average Number of Trips</td>
<td>2.6</td>
</tr>
<tr>
<td>Maximum Number of Trips</td>
<td>9</td>
</tr>
<tr>
<td>Minimum Number of Trips</td>
<td>0</td>
</tr>
</tbody>
</table>
RV Survey – Application

- Trip production model
- Trip distribution model
- Time of day analysis
- Trips will be assigned to the highway network
- Model developed to capture seasonal factors
  - Winter, spring, summer, and fall
Passively Collected Mobile Phone Location Data

- Entire Month of May 2013
- AirSage, an Atlanta based wireless information and data provider
  - Anonymous location and movement of mobile devices derived from wireless signaling data
  - Provides insights into origin and destination travel movements in a region
- Very large data set
- Trip purposes are synthesized
- No behavioral and demographic information
Passively Collected Mobile Phone Location Data – Application

- Robust validation of trip distribution patterns by trip purpose and time of day
- Development and validation of external trip model
- Secondary validation of highway assignment
FF Travel Time Distribution for OP HBW Trips

Average Travel Time = 12.6 mins