

2007 MWCOG  
Household Travel  
Survey

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Governments  
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Washington Region  
Complexity

- Multi state, multi jurisdictional
- Different modal options
  - Commuter Bus (multiple providers)
  - Commuter Rail (multiple providers)
  - Subway (Metro)
  - Local Bus (multiple providers)
  - HOV lanes - slugging
  - Bicycle paths and lanes

## ● ● ● | Washington Region Complexity (cont'd)

- Special accommodations for challenges
  - Trained interviewers on local area geography
  - Geocoded trip ends in house
  - Offered \$50 incentive to attract non-traditional households
    - Minorities, households in poverty, cell phone-only households

## ● ● ● | Working with Baltimore

- Baltimore Metropolitan Council joined beginning in Quarter 2
- Win-win for both agencies resulting in fuller dataset that is completely integrated
- Have continued to work with BMC during the editing process



## Geocoding

- o Done during the survey
  - New for both MPO and for contractor
  - Allowed for local knowledge to be applied
  - Moved to Navteq Database (very helpful)
- o Results: 97% of trip ends geocoded to x,y coordinates



## Geocoding Technology

- o Anybody can geocode, but not always well!
- o ArcMap allows for a reasonable autocoder
  - Overall about 75% autocoded
- o Manual coder is tedious but functional
- o Online map services have come a long way
  - Mapquest has a solid tight algorithm, but requires state/city or zip
  - GoogleMaps is looser – good when provided info is thin

Maps - Enter as much as you know  
Find a Business e.g., Apartment or Restaurant

Address of Intersection  
1500 K St

City State ZIP Code  
Washington DC

Map: Street View 3D & Cycles  
Map Data © 2010

1500 K St NW  
Washington, DC 20005-1200  
View | Directions | Location from Search history | Street View | Details | Photos

1500 K St SE  
Washington, DC 20003-3236  
View | Directions | Location from Search history | Street View | Details | Photos

1500 C St NE  
Washington, DC 20002-4422  
View | Directions | Location from Search history | Street View | Details | Photos

1500 C St SE  
Washington, DC 20003-3432  
View | Directions | Location from Search history | Street View | Details | Photos

1500 Pennsylvania St NW  
Washington, DC 20011  
View | Directions | Location from Search history | Street View | Details | Photos

**MAPQUEST gives all options upfront**

Address:  
1500 K St NW  
Washington, DC 20005

Get directions: [To here](#) - [From here](#)  
Search nearby - [Save to My Maps](#)  
[Edit](#)  
Last edited by me, on Aug 20

**GOOGLE assumes, but has transit stations**

1500 K St NW  
Washington, DC 20005

Did you mean  
1500 K St SE, Washington, District of Columbia, DC 20003

## Post Survey Activities

- o Contractor runs edit checks on data
- o Contractor QCs geocoding
- o MWCOG runs additional edit checks (adding local knowledge)
- o Determine if any households will need to be dropped for insufficient data



## Basic Edit Checks

- Verify Persons with no trips are reasonable
- Verify Persons outside Region for full travel day are truly outside Region
- Verify Trip +Activity Time = Full 24 hours (for trip makers who spent some or all of their day in region)



## Basic Edit Checks (cont'd)

- Geocoded remaining missing trip ends
  - About 3% of 132,000 trip ends
  - Used other household members or other destinations to determine locations where necessary
- Conduct analysis of Quick Stops (gas vs. other)
  - Recode trip purpose of some 'Quick Stops'



## Commuter Rail/Bus Analysis

- Standardize Rail Station Names
- Verify Rail Trips start & end at stations
- Recode trips to Metro/Local Bus as necessary
- Add missing Mode of Access/Egress segments



## Metrorail Trip Analysis

- Standardize Metrorail Station Names
- Verify Metro Trips start & end at stations
- Recode trips to Commuter Rail or Local Bus as necessary
- Add missing Mode of Access/Egress segments
- Used Metro's Trip Planner to aid in decision making for trip tours missing segments

The screenshot shows the Metro Trip Planner interface. The search parameters are:
 

- From: 777 N Capitol St NE
- To: 1919 Connecticut Ave NW
- Mode: Bus (selected)
- Date: Jan 11, 2009
- Time: Leaving after 08:07 AM
- Walking Distance: up to 60 miles

 The results section, titled 'Itinerary 1', shows a total walking distance of 9.61 miles and a total travel time of 85 minutes. The itinerary is broken down into segments:
 

- Walk 9.61 mile N from 777 N CAPITOL ST NE to H ST NW & N CAPITOL ST NE
- 8040B (Bus) from H ST NW & N CAPITOL ST NE at 8:27am to NW 1 ST & NW 14TH ST at 8:34am
- X2 BUS (Bus) from H ST NW & N CAPITOL ST NE at 8:27am to LAFAYETTE SQUARE
- 42 BUS (Bus) from NW 1 ST & NW 14TH ST at 8:40am to NW CONNECTICUT AV & NW FLORIDA AV at 8:51am


## Local Bus (only) Trips Analysis

- o Verify Trips are Bus Only
- o Add missing Mode of Access/Egress segments
- o Switch to MetroRail trips as necessary



## Carpool/Auto Passenger Analysis

- Verify each passenger has a driver
- Consistency check with other household members



## Trip Linking & Survey Weighting

- Verify estimated modal shares and person trip totals with other data sources (eg. Metrorail and Metrobus surveys, ACS Commuting Data)
- Time/Distance/Speed checks by mode
- Check trip length frequency distribution by trip purpose





## Some Lessons Learned

- o Schedule sufficient time for developing survey materials and scripts for CATI system
- o Pretest is helpful for checking methodology and trying strategies
- o Schedule time to analyze pretest results before moving into main survey



## Some Lessons Learned (cont'd)

- o Incentive is useful
  - Industry question – How much money should be offered to be effective without spending more than necessary?
- o Geocoding in house allowed us to keep closer control on how it was going during the survey – rather than after the fact



## Next Steps

- Finish processing data
- Fully analyze results
- Produce reports