

# REGIONAL TRAVEL SURVEY



Planning Our Future Together

# 2017-2018 REGIONAL HOUSEHOLD TRAVEL SURVEY

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## Status Report #7

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# Presentation Outline

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- Pre-test survey methodology
- Pre-test survey response rates
- Recommended modifications for the main survey
- Analysis of pre-test survey data
- Some issues with the travel day questionnaire (rSurvey) and the smartphone app (rMove)
- Updated survey schedule
- Next steps and next report to TFS

# Pre-test Survey Methodology

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- Mailed 16,020 invitations to households asking them to participate in the pre-test. Invited households were assigned to two equal segments: Segment 1 (rSurvey and rMove) and Segment 2 (rSurvey only)
- In **Part 1** of the survey;
  - Both Segment 1 and Segment 2 households were recruited using the rSurvey web-based questionnaire
- In **Part 2** of the survey;
  - Segment 1 households with qualifying smartphones were asked to complete a 7-day travel survey using the rMove smartphone app
  - Segment 1 households without qualifying smartphones were asked to complete a one-day travel survey using rSurvey
  - All Segment 2 households were asked to complete a one-day travel survey using rSurvey



# Part 1 Recruitment

Part 1 – Survey Recruitment	Segment 1	Segment 2	Pre-Test Total
Mailed Invitation Letters	8,010	8,010	16,020
Began Recruitment Survey	569	571	1,140
Completed Recruitment Survey	472	495	967
% Completed	5.9%	6.2%	6.0%



## Part 2 Survey Travel Day Response for Households without Qualifying Smartphones

Part 2 – Survey Travel Day	Segment 1	Segment 2	Pre-Test Total
Recruited HH with No Smartphones	153	165	318
Survey Method	rSurvey	rSurvey	Pre-Test Total
Completed and partially completed HH Travel Day Surveys	116	116	232
Completed HH Travel Day Surveys	109	106	215
% Completed	71.2%	64.2%	67.6%

- Approximately 1/3 of the recruited households in both segments did not have qualifying smartphones and used rSurvey to report all travel for their household on their assigned travel day



# Part 2 Survey Travel Day Response for Households with Qualifying Smartphones

Part 2 – Survey Travel Day	Segment 1	Segment 2	Pre-Test Total
Recruited HH with Smartphones	319	330	649
Survey Method	rMove	rSurvey	Pre-Test Total
Completed and partially completed HH Travel Day Surveys	127	241	368
Completed HH Travel Day Surveys	96	221	317
% Completed	30.1%	67.0%	48.8%

- The response rate for Segment 1 households using the rMove smartphone app to report on their daily travel was less than half that of Segment 2 households using rSurvey

# Overall Survey Response Rates

Overall Survey Response – Part 1 & Part 2	Segment 1 (rSurvey & rMove)	Segment 2 (rSurvey only)	Pre-Test Total
Travel Day Completes/ Mailed Invitations	2.6%	4.1%	3.3%

- Both the overall response rates for Segment 1 and Segment 2 households were less than the target of a 5% overall response rate
- Some modification of the Part 1 and Part 2 survey protocols will be required for the main survey to achieve the desired target of 15,000 completed travel survey households

# Recommended Modifications for the Main Survey to Increase Response Rates

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- **Mail Recruitment Protocol**

- Revised invitation letter to be mailed first, followed by 3 reminder postcards (no pre-notice postcard)
- Increase incentive for participation from \$10 to \$20 per household
- Increase the survey recruitment window to 64 days;
  - 1<sup>st</sup> reminder postcard sent to non-responding households after 7 days from letter mail-out date
  - 2<sup>nd</sup> reminder postcard after 21 days
  - Final reminder postcard after 35 days
- Immediate thank you email to recruited households
- Coordinate mailing schedule with recruitment calls from call-center
- Outreach consultant to target and encourage responses from underrepresented and hard-to-reach households





# Other Modifications for the Main Survey

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- **Sampling Plan**
  - Based on pre-test sampling plan for the first quarter, with possible oversampling in later phases
  - Coordinate with the Baltimore Metropolitan Council (BMC) for overlapping jurisdictions (Anne Arundel, Carroll, and Howard Counties)
- **Survey Questions**
  - Revisions to Part 1 Recruitment Survey
    - # of HH bikes, bikeshare, race/ethnicity, use of public transportation, workplace varies, household income
  - Revisions to Part 2 Travel Diary
    - Currently under discussion with survey contractor



# Analysis of Pre-Test Survey Data

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- Detailed household, person, trip, and vehicle files from the Part 1 recruit survey and the Part 2 travel diary for the web (rSurvey) and smartphone app (rMove) versions of the pretest survey were reviewed and checked for errors
- Trip files from rSurvey were reviewed with particular attention to multi-modal change of mode trips and trips that involved the use of Metrorail and/or Baltimore Metro Subway
- Weekday trip files from rMove were also checked to ensure data quality



# Some Issues with rSurvey travel day questionnaire

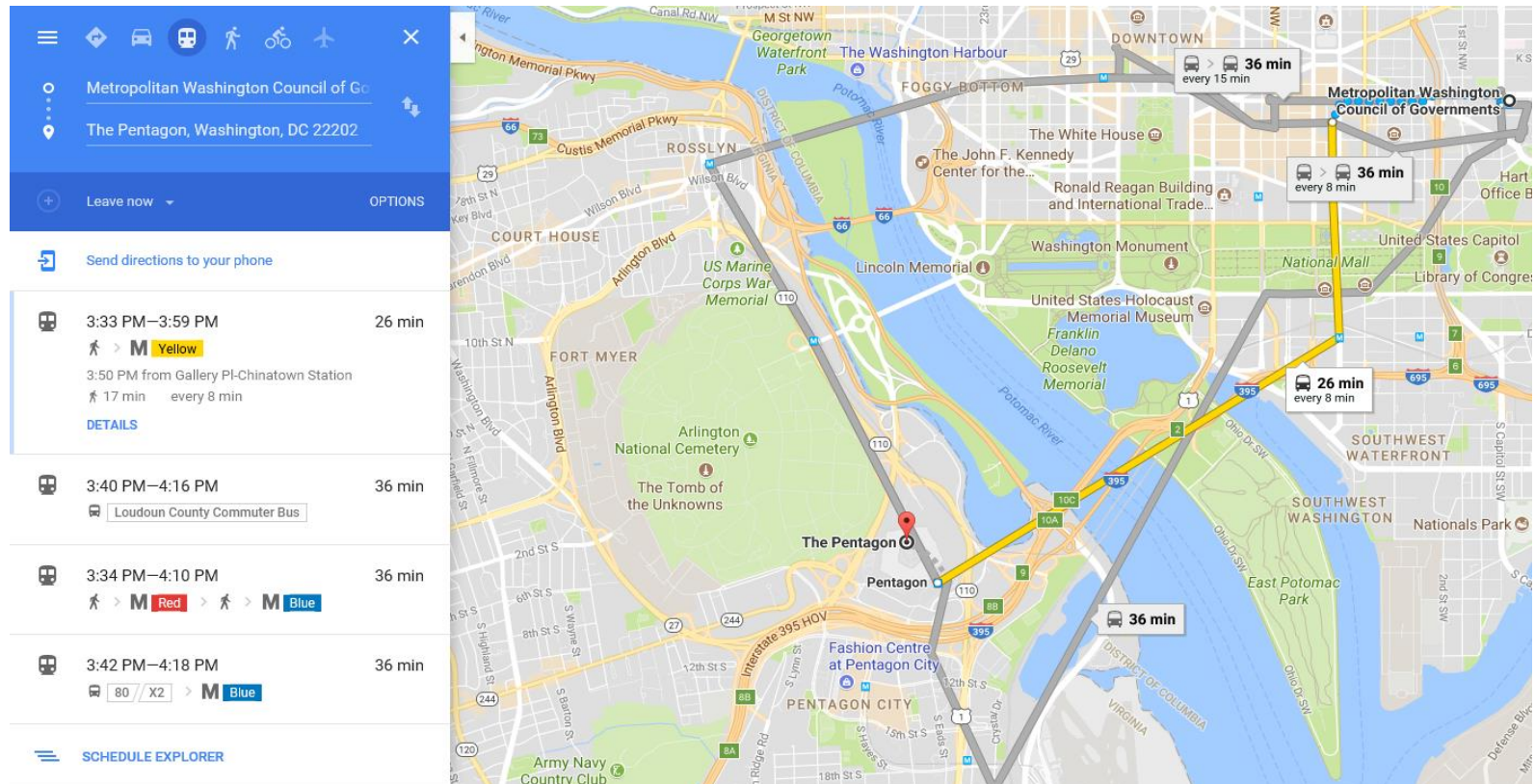
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- Geocoding of some workplace and school locations
- Geocoding of previously identified generic places (e.g., bus stop, child's school, etc.)
- Multimodal trips reported differently by different respondents (e.g., some respondents reported change of mode at bus stops, rail stations, and other locations but others did not)
- Order of travel mode used (e.g., some obvious Metrorail trips reported as walk trips because walk was the first mode listed)
- Difficult to add missed trips at end of survey
- Walk and bike loop trips not listed separately



# Geocoding Issue (1)

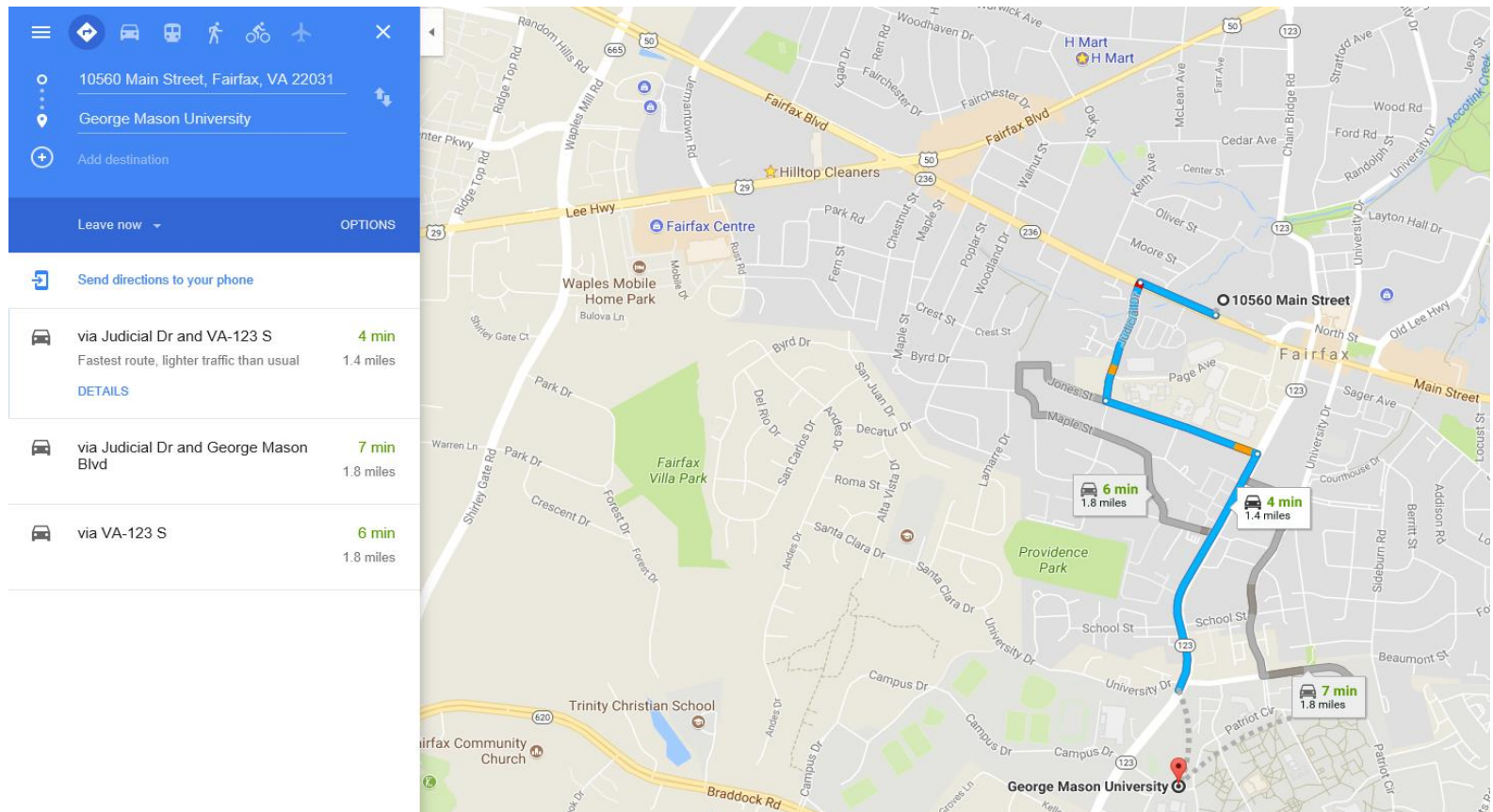
- Geocoding of Workplace Locations
  - Some work addresses are geocoded to a place name centroid rather than a specific address



# Geocoding Issue (2)

- Geocoding of School Locations

- Example: George Mason University (no physical address)



# Some Issues with rMove Smartphone App

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- Spurious or “phantom trips”
- Premature ending of trips due to GPS signal loss
- Access/egress modes to transit are usually recorded as one continuous trip
- Inconsistent distance, duration, and speed values in the trip file due to missing or incorrectly geocoded location points
- The app is time-based rather than destination-based, making it difficult to change the start and end times of trips
- Overall, rMove tends to work better for vehicle trips than walk, bike, or transit trips



# Updated Survey Schedule

- Survey refinement through August 2017
- Main survey: September 2017
  - 12 months of travel dates
- Complete main survey: Fall of 2018
- All deliverables by early 2019



# Next Steps and Next Report to TFS

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- Make necessary revisions to survey instrument
- Prepare for the main survey launch
- Next report to TFS: September 2017 meeting





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