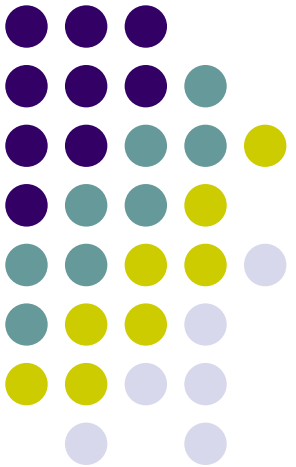
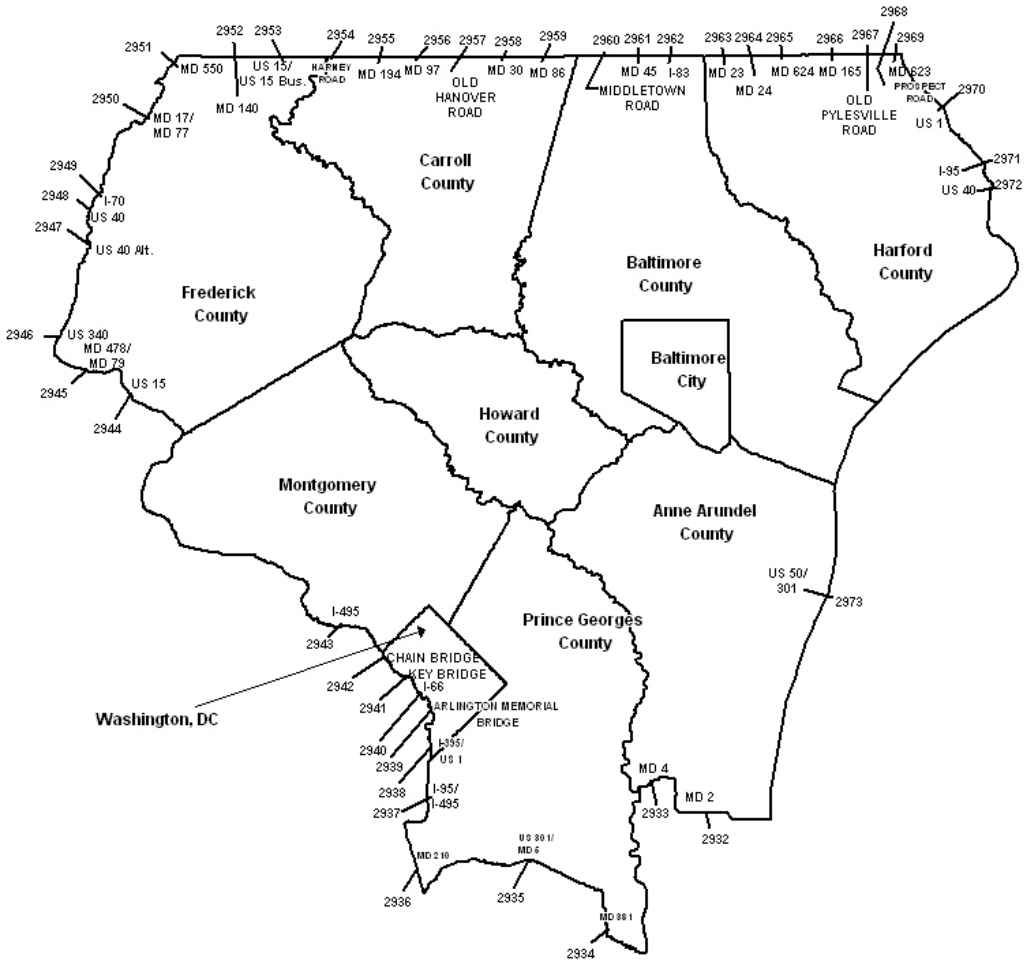
External Survey – Hybrid Approach Presented to BRTB

February 27, 2007



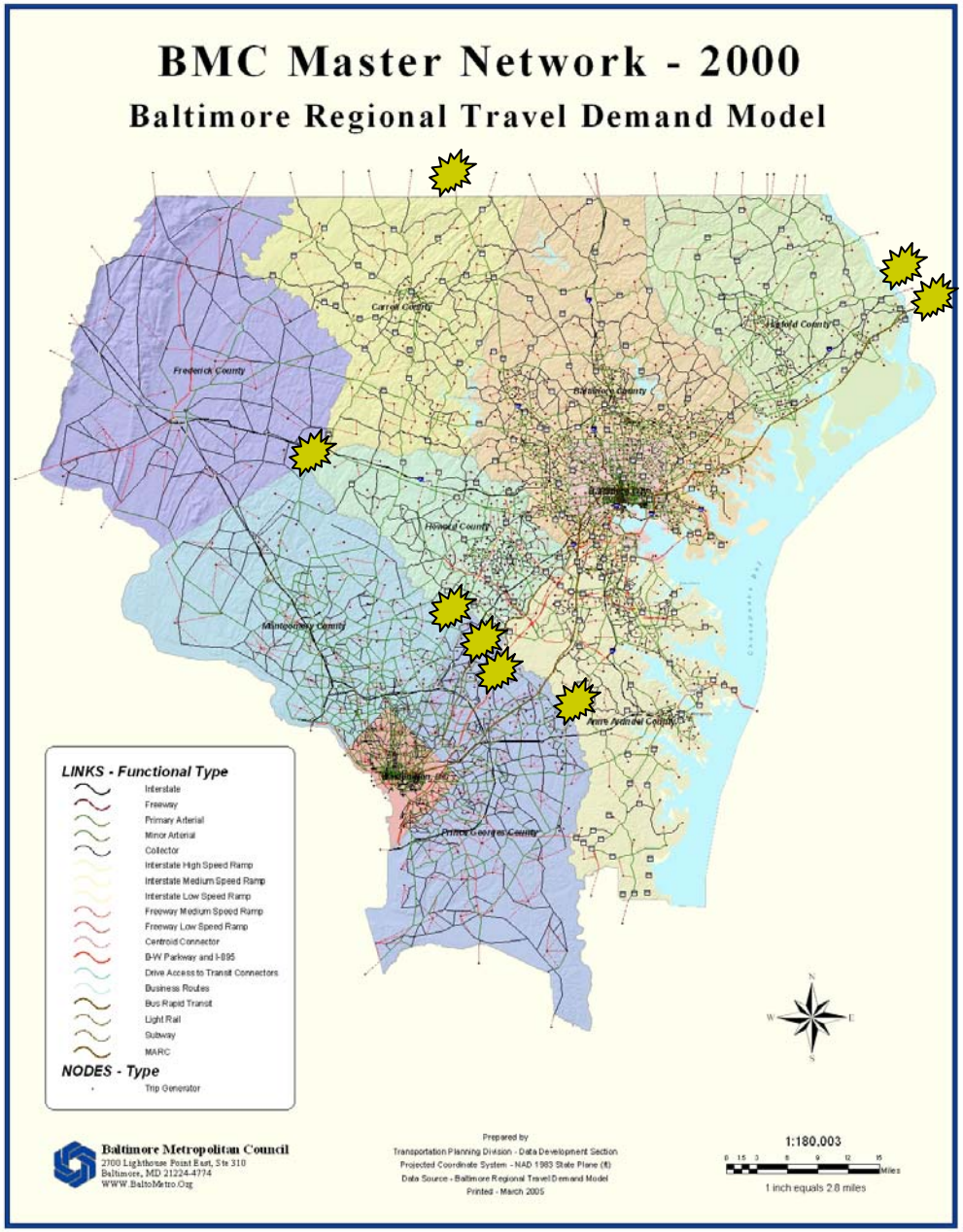
External Stations



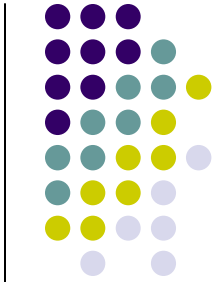
42 External Stations totaling 1.5 million ADT (SHA Data)

2006 Approach

- Sites selected for surveys on August 17, 2006
  - Arterial Sites:
    - MD 30 at the Carroll County / Pennsylvania State Line
    - US 40 at the Harford / Cecil County Line
    - MD 3 at the Anne Arundel / Prince George's County Line
  - Freeway Sites:
    - MD 295 at the Anne Arundel / Prince George's County Line
    - I-70 / US 40 at the Carroll / Frederick County Line
    - US 29 at the Howard / Montgomery County Line
    - I-95 at the Howard / Prince George's County Line
  - Toll Plaza Site
    - I-95 at the Harford / Cecil County Line
- Project on hold until Spring 2007

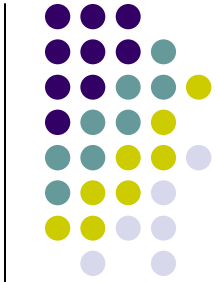


2006 Methodology



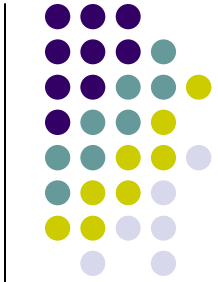
- Freeway Sites (I-95, I-70, US 29, MD 295)
  - Record license plates of all vehicles in one direction at the four freeway locations
  - Mail surveys to MD registered vehicles approximately a week after they were observed – survey will not have exact location
- Arterial Sites
  - Distribute surveys at the first signalized location in Carroll County on MD 30
  - Distribute surveys at a signalized location along MD 3
  - Distribute surveys at a signalized location on US 40 near toll plaza
- Toll Plaza Site
  - Distribute surveys at I-95 toll plaza (NB) and videotape license plates in the EZ Pass lanes for mail back surveys to MD registered vehicles

2006 Methodology Pros and Cons



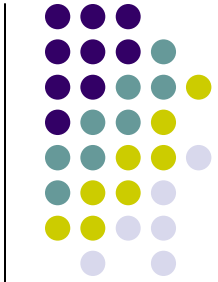
- Pros
  - Provide information on X-X, I-X, and X-I trips
- Cons
  - No information on VA, PA, DE, and other state registered vehicles (freeway sites)
  - Timing of mailing surveys is critical – longer time for processing/MVA turnaround will lead to lower response rate
  - Survey will not identify exact location where vehicle was observed – privacy concerns. This could limit survey response and/or inaccurate responses
  - Not enough information to calibrate the model
  - Total Cost - $716,260
  - Limited amount of return on a significant investment

2007 Hybrid External Survey Approach



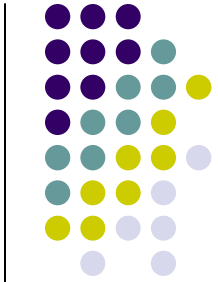
- Surveys at the three externals (MD 30, US 40, I-95) as per the original approach
- Distribute surveys at a signalized location along MD 3
- **Match license plates using video cameras at county lines on I-95, US 29, MD 295 (if permitted – proximity to NSA, Fort Meade) – better way to measure number of X-X trips through Howard and Anne Arundel Counties. Also obtain % of out-of-state vehicles**
- **Use data from MWCOG HH survey in Anne Arundel (400) Howard (200), and Carroll (100) counties (add additional HH's to meet statistical requirements) – currently underway**
- **BMC HH surveys (~1400) in Baltimore City, Baltimore, Carroll, Howard and Harford counties using MWCOG process/consultant – begin 2nd quarter of 07**
- **Hybrid approach approved by Oversight Committee – February 2, 2007**

BMC/BRTB Household Surveys



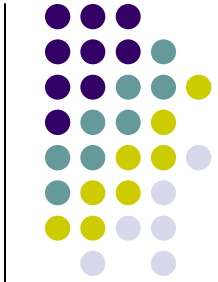
- Begin in Quarter 2
  - Mailing of advance letters the week of April 16
  - Start of household recruitment the week of April 23
  - First travel day – May 8
- Target areas excluded from COG/TPB survey
  - Baltimore City
  - Baltimore County
  - Harford County
  - Additional surveys in Carroll & Howard County for statistical significance
- Same survey instrument as COG/TPB effort – with changes to letterhead, signatures, and regional affiliations

Sample Size
90% Confidence Level, ± 10% Accuracy



		COG	BMC	Total
• Anne Arundel County	-	400		400
• Baltimore City	-		366	366
• Baltimore County	-		325	325
• Carroll County	-	100	282	382
• Harford County	-		357	357
• Howard County	-	200	120	320
• Total	-	700	1450	2150

Hybrid Approach Benefits



- Mini HH Survey for the entire region
- Travel by household, not an individual
- Better sample size/response rate
- Report on all trips, all purposes
- Add-on GPS component to HH Survey
- Address local and regional needs
- LP Match - better way to estimate through (X-X) trips on major facilities (possible expansion to state lines/Potomac crossing)
- More and better data for about same cost ($765k vs. $716k – preliminary estimates)

Questions/Comments