Item # 6

Congestion Management Process (CMP) and Data Activities

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MOITS Policy Task Force and Technical Subcommittee
Joint Meeting
May 12, 2009

Outline

- Background
- FY2010 work program
- Data activities
- Next steps

What is CMP?

- Congestion Management Process (CMP)
  - Is a federally required *integral* part of the metropolitan planning process.
  - Uses technical tools to define and identify congestion within a region, corridor, activity center or project area, and to develop and select appropriate strategies to reduce congestion or mitigate the impacts of congestion.
  - No single occupant vehicle (SOV) capacity expanding project can receive federal funds unless it is part of the regional CMP.

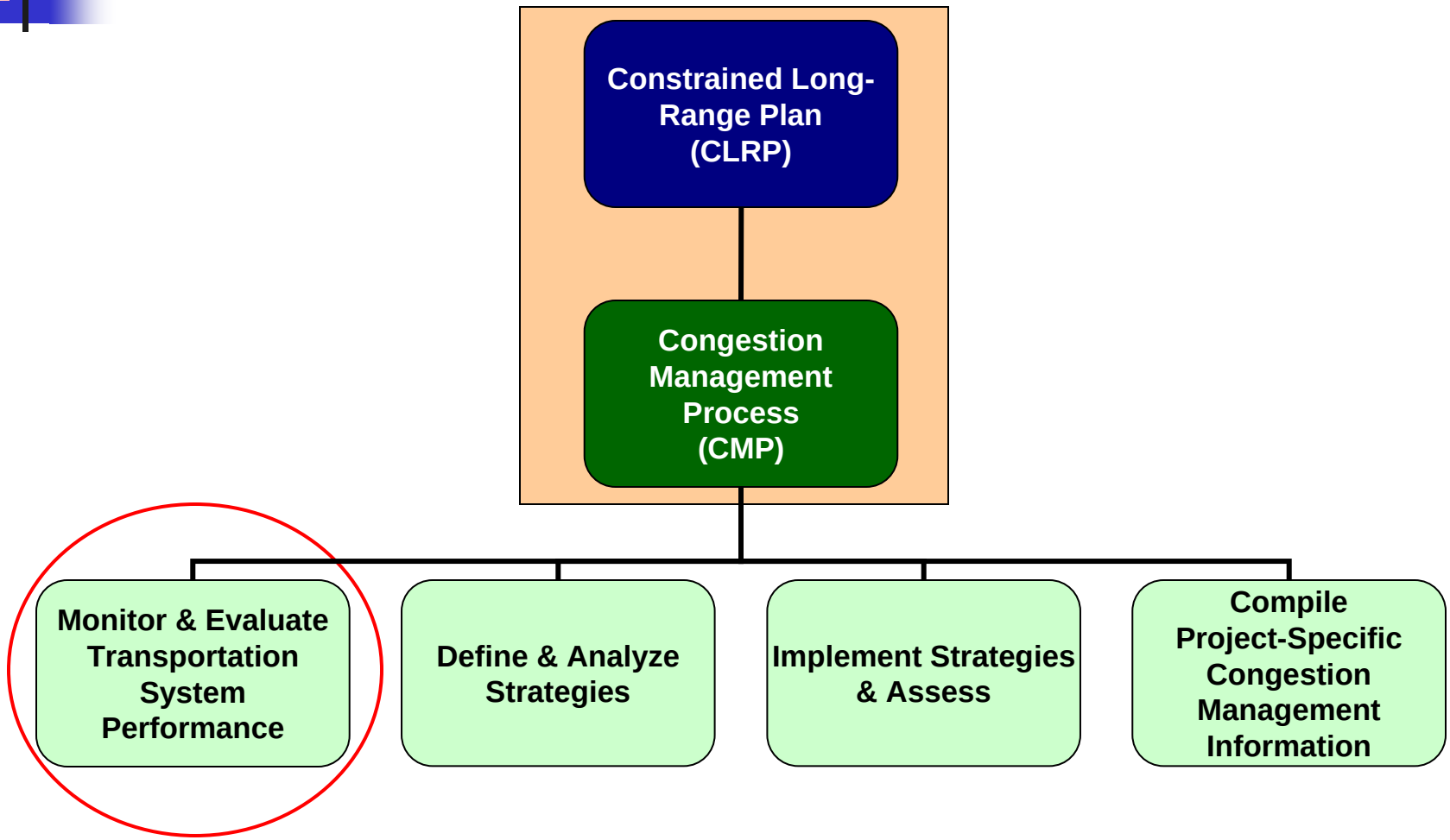
FY2008 Major CMP Activities

- CMP Component of 2008 CLRP
  - www.mwcog.org/clrp/elements/cmp
  - Identified congestion in the region
  - Developed and documented a process describing how congestion management is considered at critical stages in the metropolitan transportation planning process
  - This document addressed federal requirements
- Congestion Management Documentation Forms for the CLRP and TIP
  - Supporting CMP reference material
  - Reviewed and accepted by Travel Management Subcommittee and TPB Technical Committee April 2008
- 2008 CMP Technical Report
  - Supporting technical background document to the CMP
  - Published on June 27, 2008

FY2010 CMP Work Program

- CMP Component of the CLRP
  - Provide update to FY2010 CLRP
- CMP Documentation Form Information
  - To be complied with Call for Projects for the FY 2010 update of CLRP and 2010-2015 TIP
- CMP Technical Report
  - An updated version (from the 2008 version) will be published in FY2010

CMP Components



Current Congestion Monitoring Activities at TPB

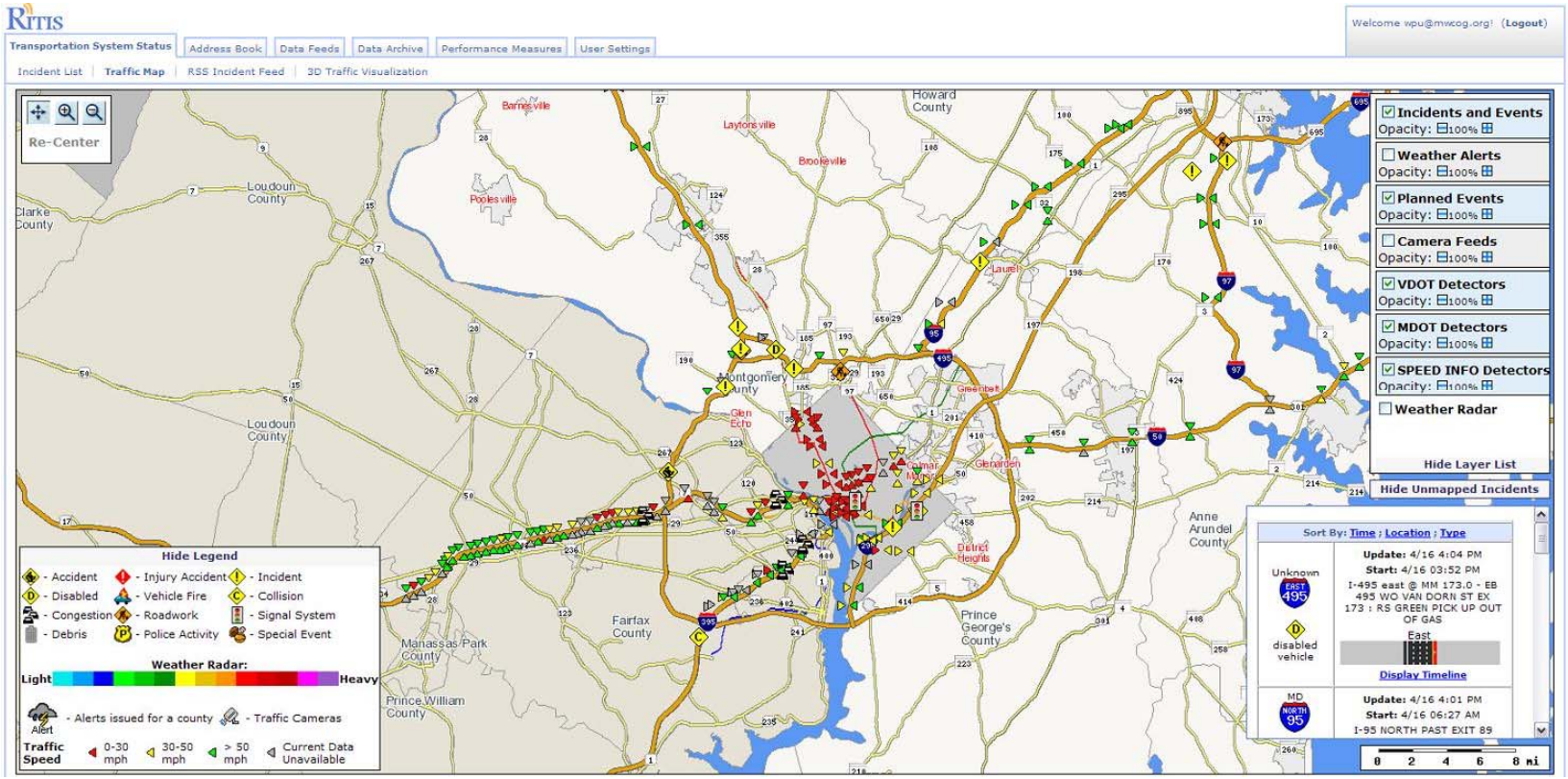
- Freeways
  - Skycomp aerial photography survey
  - Once-every-three-years for AM and PM peaks
- Arterials
  - Floating vehicle survey
  - Routes are monitored on a three-year cycle
- Regional data clearinghouse
  - Useful to determine V/C ratio
- Cordon counts (including transit data)
- Other special studies

Exploring Other Congestion Monitoring Data Sources

- Regional monitoring activities by other organizations
  - RITIS
  - I-95 Corridor Coalition
- Jurisdictional monitoring activities
  - VDOT Dashboard
  - MD CHART
  - DDOT
  - Montgomery County
- FHWA Intelligent Transportation Infrastructure Program (ITIP)
- Independent traffic information providers
  - INRIX
  - Traffic.com
  - Speedinfo

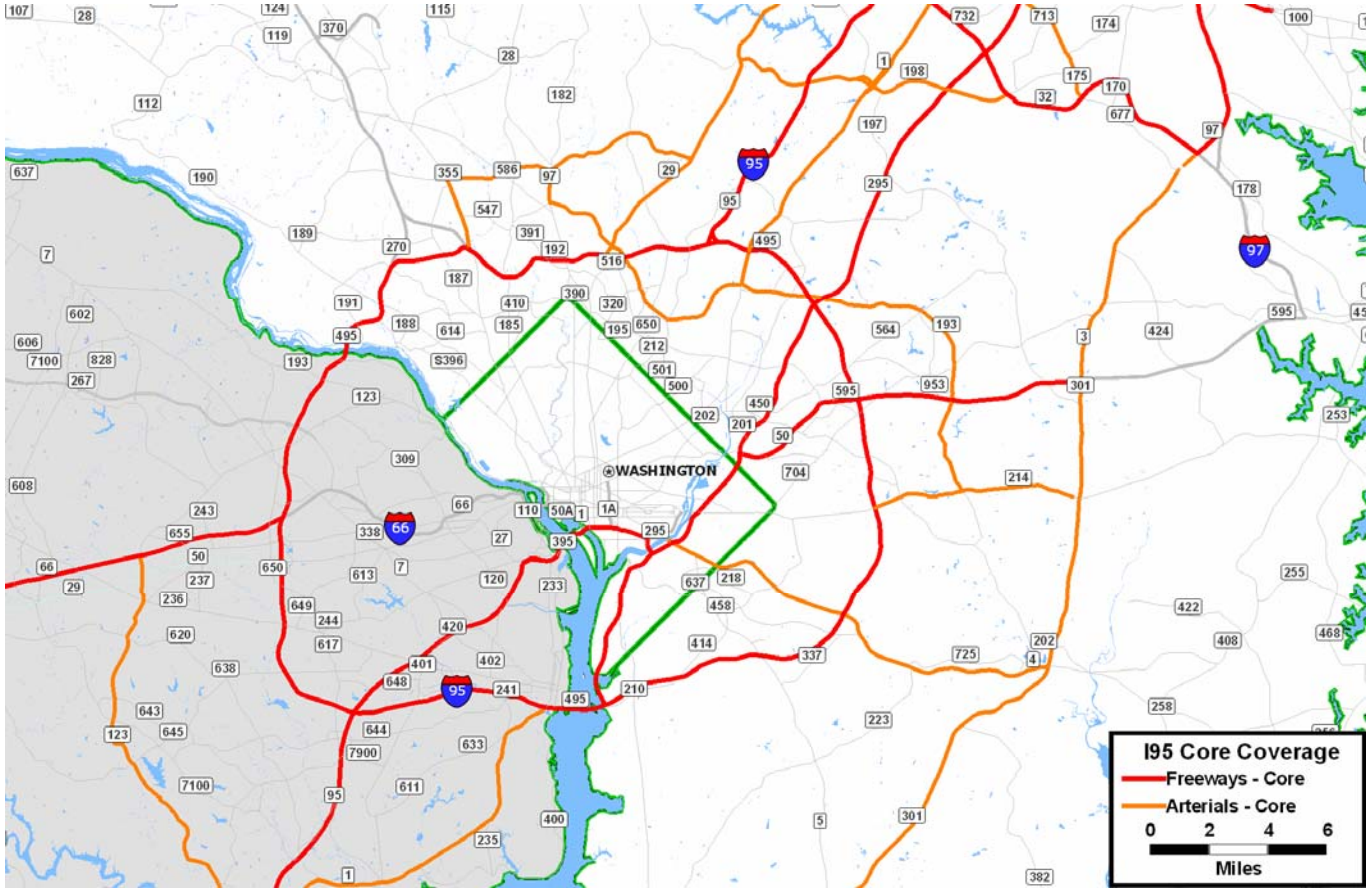
Regional Monitoring Activities

- RITIS



Regional Monitoring Activities (Cont'd)

- I-95 Corridor Coalition



Jurisdictional Monitoring Activities

- VDOT Dashboard (ADMS data)
- MD CHART
- DDOT (Speedinfo's data)
- Montgomery County Highway Mobility Monitoring

ITIP

- FHWA Intelligent Transportation Infrastructure Program (ITIP) contracts with traffic.com to provide quarterly highway performance monitoring reports for a number of metro areas including Washington (as shown)
- The data quality and technical details need further investigation

traffic.com — A NAVTEQ Company

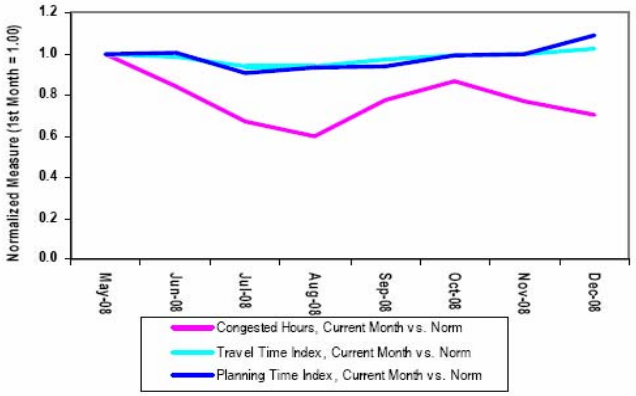
Performance Monitoring Report

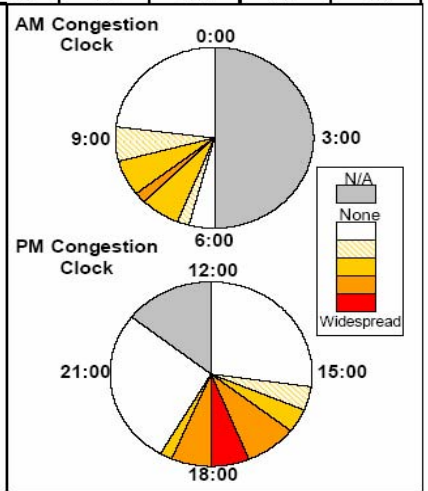
October 2008 – December 2008

Washington DC

Metropolitan Area Executive Summary

YEAR	Congestion Indicators: Congested Hours Weekday 3.0% ↓ Total	AM	PM	Weekend	Travel Time Index Weekday Peak 2.0% ↑ Total	AM	PM	Planning Time Index Weekday Peak 5.0% ↑ Total	AM	PM	Data Quality: % Available Data:	Useable Days	Contributing Factors (Peak Period): Weather [1]	Work Zone [2]	Incidents [3]	Travel Demand [4]
Dec-08	5.13	2.0	3.1	0.3	1.33	1.3	1.4	1.823	1.6	2.0	53%	0 of 92	4%	N/A	361	23,010
Oct/Nov08	5.29	2.3	3.0	0.4	1.30	1.3	1.4	1.733	1.6	1.9	53%	0 of 92	3%	N/A	342	23,856
Change vs. Previous 2 Months:											0%	0%	1%	N/A	6%	-4%





Dec-08	Dec-07	Road	Description	Miles	Average Speed (mph): Weekday Peak	Weekday All Day	Average Volume (veh/hr): Weekday Peak	Weekday All Day	Workzone (mile-hrs)	Incidents
1	N/A	I-395	I-395 SB: New York Ave to SE/SW Frwy	3.0	41	47	3,115	1,933	NA	NA
2	N/A	I-395	I-395 NB: SE/SW Frwy to New York Ave	2.5	42	44	3,620	2,176	NA	NA
3	N/A	I-495	I-495 OL: American Legion Brg to I-66	6.7	44	49	5,584	3,539	NA	NA
4	N/A	I-295	I-295 SB: I-395 to I-495 Capital Beltway	6.6	45	49	2,873	1,766	NA	NA
5	N/A	I-66	I-66 EB: RT-50/Lee Jackson Hwy to I-495 Capital E	7.5	46	51	3,018	1,876	NA	NA
6	N/A	SR-267	SR-267 EB: Hunter Mill Rd (#14) to I-66	7.7	47	51	4,189	2,250	NA	NA
7	N/A	DC-295	DC-295 NB: I-295 Split to RT-295 Balt-Wash Pwky	4.5	48	49	2,517	1,622	NA	NA
8	N/A	I-66	I-66 WB: I-495 Capital Beltway to RT-50/Lee Jacks	7.6	49	56	2,669	1,825	NA	NA
9	N/A	DC-295	DC-295 SB: RT-295 Balt-Wash Pkwy to I-295 Split	4.8	49	52	3,384	1,913	NA	NA
10	N/A	I-95	I-95 SB: Dale City to RT-619/Triangle	4.2	49	55	2,294	1,563	NA	NA

Top 10 Congested Corridors

Planning Time Index and Travel Time Index show an increase compared to the previous two months. Congestion Hours shows and improvement.

[1] Percentage of peak period hours with precipitation
[2] Average number of work zones during peak period hours per day
[3] Average number of incidents during peak period hours per day
[4] Average number of vehicles per mile during peak period hours per day

Data Source(s): Traffic.com, Inc., Virginia Department of Transportation, and Maryland State Highway Administration

For more information, contact: (scott.perley@navteq.com)

Independent Traffic Information Providers

- INRIX
  - Provides traffic information to Mapquest
- Traffic.com (a NAVTEQ company)
  - Provides traffic information to Google Maps
- Speedinfo
- Other providers
- All provide traffic information to various customers (e.g., GPS devices, radio stations)

INRIX

- INRIX publishes annual report for the whole nation as well as individual metropolitan areas
- The data quality and technical details need further investigation
- INRIX has detailed proprietary data available for purchase

INRIX National Traffic Scorecard 2008 Annual Report

#5 Washington Metropolitan Area

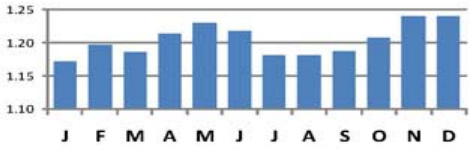
National Congestion Rank: #5 (2007 Rank: #4) **Population Rank: #8** (5,306,565)

CBSA: Washington-Arlington-Alexandria DC-VA-MD-WV

Overall Congestion

Congestion Compared to	
2007:	-25.6%
Worst Metro Area (L.A.):	36%
Travel Time Index(TTI)[1]	
TTI:	1.20
National TTI Rank:	7
Compared to 2007:	-5.9%
Peak Travel Hour[2]	
2008 Worst:	Thursday, 5-6 PM (TTI = 1.42)
2007 Worst:	Friday, 5-6 PM (TTI = 1.56)

Travel Time Index[1] by Month



Worst Bottlenecks

Bottleneck Rank Regional	National 2008	National 2007	Road/Direction	Segment/Interchange	County	ST	Length (Mi)	Hours of Congestion[3]	Avg Speed when Congested[3] (mph)
1	176	84	Henry Shirley Memorial Hwy/I 395 NB	GEORGE WASHINGTON MEMORIAL PKWY	Arlington	VA	0.21	34	13.2
2	188	306	I 95 SB	HWY 7100/EXIT 166	Fairfax	VA	1.70	34	18.6
3	191	256	I 66 EB	HWY 267/EXIT 67	Fairfax	VA	0.23	26	13.1
4	209	231	Custis Memorial Pkwy/I 66 WB	FAIRFAX DR/EXIT 71	Arlington	VA	0.59	34	18.6
5	262	185	Henry Shirley Memorial Hwy/I 395 NB	HWY 110/EXIT 9	Arlington	VA	0.32	27	13.9
6	263	177	Henry Shirley Memorial Hwy/I 395 NB	BOUNDARY CHANNEL DR/10TH ST/EXIT 10	Arlington	VA	0.27	26	13.0
7	264	289	Capital Beltway/I 495 EB	I 270/EXIT 35	Montgomery	MD	0.73	23	13.2
8	336	409	Capital Beltway/I 495 EB	HWY 355/WISCONSIN AVE/EXIT 34	Montgomery	MD	0.69	22	14.3
9	373	255	Capital Beltway/I 95/I 495 SB	EXIT 2A - B	Prince George's	MD	1.26	31	21.2
10	389	252	Capital Beltway/I 95/I 495 EB	HWY 241/TELEGRAPH RD/EXIT 2	Fairfax	VA	1.71	20	15.4
11	437	175	Capital Beltway/I 95/I 495 EB	US 1/EXIT 1	Alexandria	VA	1.46	24	18.0
12	459	552	Capital Beltway/I 495 NB	HWY 650/NEW HAMPSHIRE AVE/EXIT28	Montgomery	MD	1.16	18	14.1
13	523	678	Baltimore Washington Pkwy/Hwy 295 NB	POWDER MILL RD	Prince George's	MD	2.08	24	22.1
14	558	751	Capital Beltway/I 495 WB	HWY 193/UNIVERSITY BLVD/EXIT 29	Montgomery	MD	1.37	20	18.2
15	562	697	Baltimore Washington Pkwy/Hwy 295 NB	GODDARD RD	Prince George's	MD	1.12	23	21.6
16	614	859	Capital Beltway/I 495 NB	HWY 190/RIVER RD/EXIT 39	Montgomery	MD	0.10	16	15.7
17	616	1099	Southwest Fwy/I 395 SB	12TH ST/MAINE AVE	District of Columbia	DC	0.61	18	14.4
18	624	688	Custis Memorial Pkwy/I 66 EB	WESTMORELAND ST/EXIT 68	Arlington	VA	1.08	23	20.7
19	634	801	I 95 SB	HWY 123/EXIT 160	Fairfax	VA	0.84	24	23.8
20	644	834	Capital Beltway/I 495 EB	HWY 185/CONNECTICUT AVE/EXIT 33	Montgomery	MD	1.55	20	18.4
21	673	389	I 66 WB	VADEN DR/EXIT 62	Fairfax	VA	0.62	20	20.4
22	708	2044	Southwest Fwy/I 395 SB	6TH ST	District of Columbia	DC	0.08	18	14.5
23	739	882	I 66 WB	EXIT 44	Prince William	VA	3.08	17	18.1
24	745	871	Custis Memorial Pkwy/I 66 EB	US 29/HWY 237/EXIT 69	Arlington	VA	0.36	23	23.8
25	749	1044	Custis Memorial Pkwy/I 66 EB	25TH ST	Arlington	VA	0.15	23	23.8

Notes: 1 – Travel Time Index (TTI) is the ratio of actual to uncongested travel time. A ratio of 1.10 means 10% additional trip time due to congestion.
2 – Peak hours are Monday to Friday, 6 to 10 AM and 3 to 7 PM.
3 – Bottleneck "congestion" is defined as times when average hourly speed is half or less than the uncongested speed for that road segment.
Additional information on the methodologies used in this report are available at http://scorecard.inrix.com.

INRIX THE LEADING PROVIDER OF TRAFFIC INFORMATION

A-5

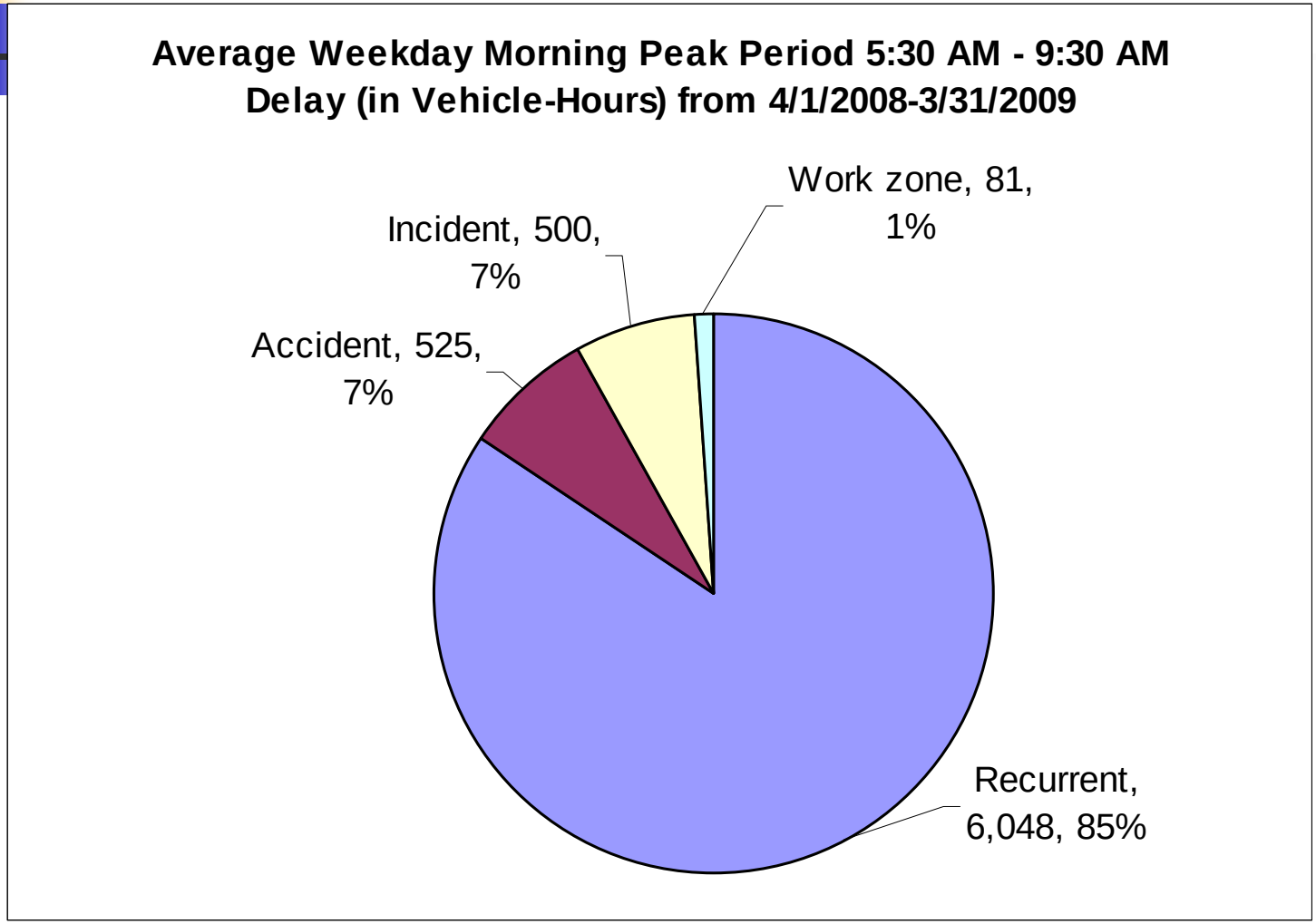
Considerations for Future Data Sources for the CMP

- Continued use of longstanding data sources
  - Skycomp aerial freeway surveys
  - Existing arterial travel time surveys
- Emerging data sources
  - RITIS
  - I-95 Corridor Coalition
  - Independent traffic information providers
- Data directly from agencies (e.g. traffic sensors, signals, safety)
- Hybrid approaches of the above

An Experiment of A Hybrid Approach

- One-year traffic sensor data (speed, vehicle count, 5-min aggregated) was complied from ADMS Virginia
- One-year event data from RITIS
- I-66 EB from Bull Run Drive to the Beltway, covering about 16 miles
- Identified four components of congestion: Demand-related (recurrent), Accident-related, Incident-related, and Work zone-related.

Components of Congestion: Example I-66EB Data Analysis Results (Draft)



Next Steps

- Further data analysis and mining
  - Look into I-95 Corridor Coalition data
  - Identify components/causes of congestion
- Use TPB travel demand model results to gain insights on future congestion
- Obtain more transit and freight congestion information
- Begin integrating data for the next version of CMP Technical Report
- Continue work on the other CMP components