MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

INRIX SIGNAL SCORECARD: MARYLAND PERSPECTIVE

BMC May 2022

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MARYLAND DEPARTMENT OF TRANSPORTATION

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MARYLAND VS USA 2021

21,177 vehicles per intersection
- Average 19,331
- High 31,753 Florida
- Low 11,396 New York

63.5% arrival on green
- Average 62.8%
- High 69.1% Wyoming
- Low 57.4 % Massachusetts

19.0 seconds delay per vehicle
- Average 18.3
- High 22.1 Nevada (24.2 DC)
- Low 11.7 Wyoming

MARYLAND 2020 VS 2021
(OCT 2020 VS DEC 2021)

Vehicles per intersection
- 19,900 to 21,177

Arrival on green
- High 63.6% to 62.8%

Delay per vehicle
- 17.6 to 19.0

% Signals By LOS Grade	A	B	C	D	E	F
Weekly Average (Oct 2020)	26%	43%	25%	4.9%	0.1%	N/A
Weekly Average (Dec 2021)	24%	41%	29%	6.0%	0.3%	N/A
Peak Hour (Dec 2021)	1%	8%	21%	28%	21%	20%

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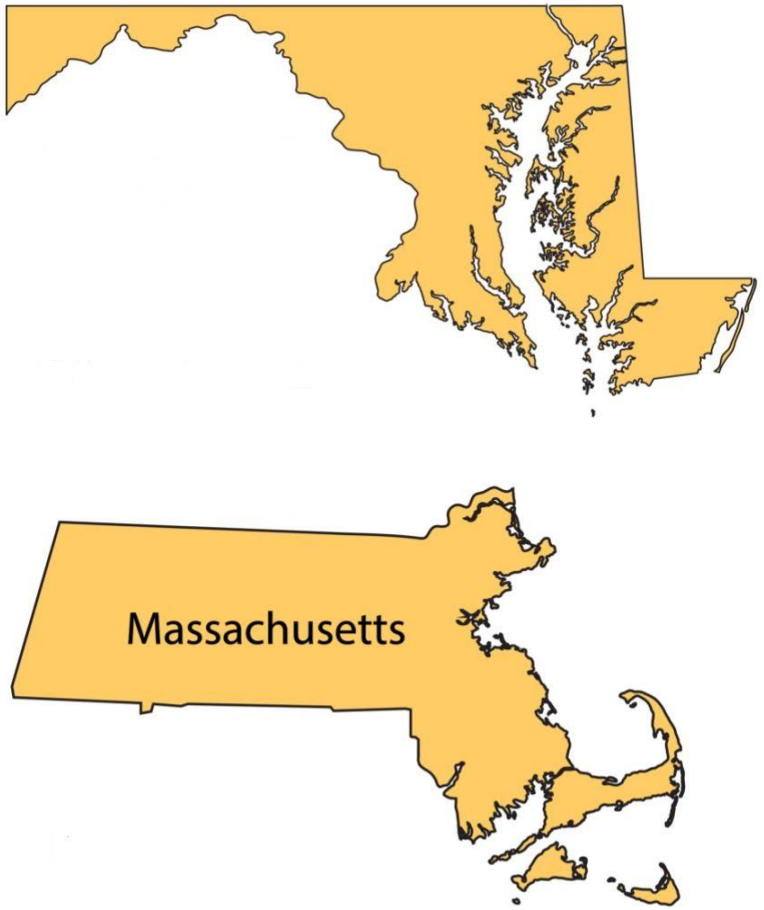
MD VERSUS MASSACHUSETTS



Massachusetts makes a good comparison to Maryland

- Similar population – 6.1 Million vs 6.9 Million
- Similar geographic area – 9,775 square miles vs 7,838 square miles
- Similar settlement – 87.2% urban vs 90.0% urban

	Inrix Signals	veh/signal	% arrival on green	delay/veh
MD	5,001	21,177	63.5	19.0
MA	4,884	17,213	57.4	20.4

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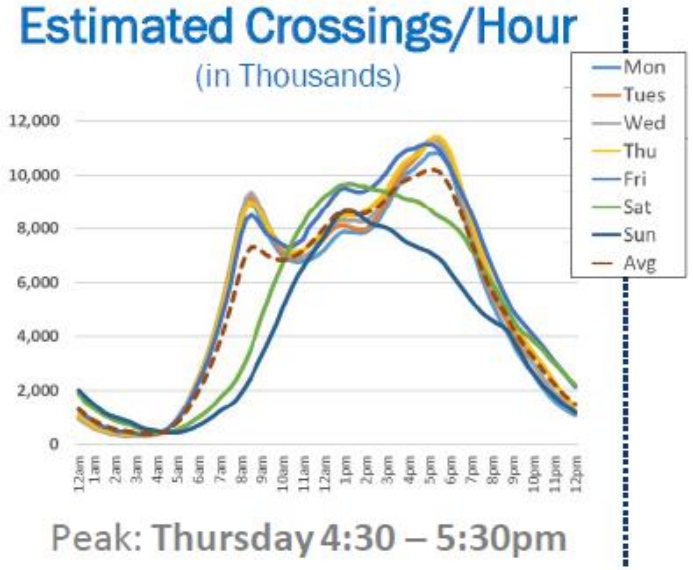
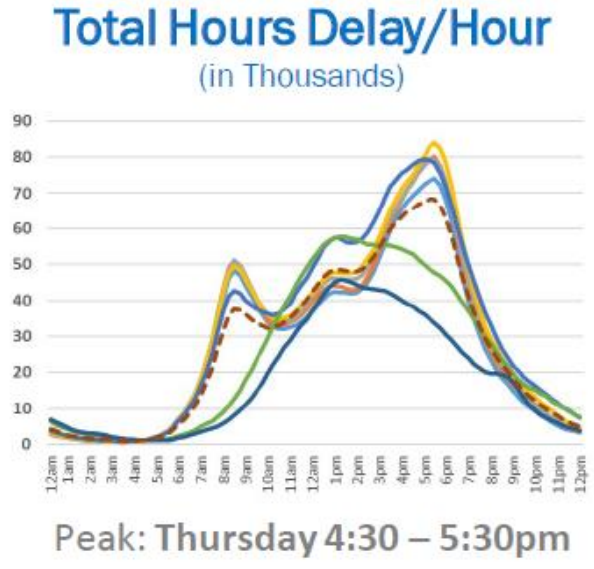
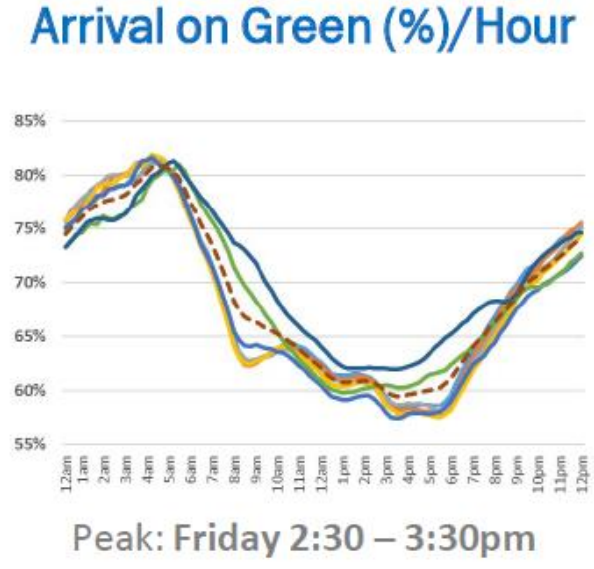
OTHER MARYLAND CONCLUSIONS

- Delay per vehicle increased from 2020 – 17.6 to 19.0
  - USA – 16.9 to 18.3
- Midday has as much volume and delay as AM peak
- Saturdays are busy
  - Need to do more with weekends
  - Does one weekend plan make sense?







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MARYLAND CONCLUSIONS FROM 2020 REPORT

- Baltimore City has the most delay per vehicle
  - 2020 state average was 17.6
  - Prince George's, Frederick and Harford also high
- 10 Worst intersections (total delay)
  - US 301 @ MD 228/MD 5 Bus (Charles)
  - US 40 @ Rossville (Baltimore)
  - MD 355 @ MD 27 (Montgomery)
  - MD 235 @ MD 4 (St. Mary's)
  - MD 355 @ MD 124 (Montgomery)
  - US 1 @ MD 410 (Prince George's)
  - MD 24 @ US 1 Bus (Harford)
  - MD 4 @ Forestville (Prince George's)
  - MD 140 @ Malcolm (Carroll)
  - MD 185 @ MD 410 (Montgomery)
- All state system, mostly big state-state intersections
- Not necessarily the most congested intersections. What would peak hour delay or delay per vehicle show?
- Like to see these metrics in future reports

Daily Averages of Counties Listed by Signal Count

County	Signals	D/V	Total DHD	DHD/Signal	AOG (%)	Total Stops
BALTIMORE (CITY)	1,115	20.7	84,058	75	59.7%	5,884,549
MONTGOMERY	737	17.8	73,853	100	64.6%	5,303,184
BALTIMORE	649	16.9	66,477	102	64.3%	5,067,356
PRINCE GEORGE'S	511	18.5	63,308	124	62.9%	4,556,043
ANNE ARUNDEL	358	17.9	41,477	116	63.0%	3,086,767
HOWARD	218	15.9	16,756	77	63.0%	1,399,631
FREDERICK	162	18.3	15,474	96	59.5%	1,235,138
WASHINGTON	160	15.0	9,316	58	63.1%	826,526
HARFORD	159	18.7	22,807	143	59.9%	1,759,173
WICOMICO	109	15.3	8,914	82	67.5%	683,682

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CONCLUSIONS:

- How do we get the bad numbers down and good numbers up?
- Where to invest?
  - Baltimore City – Highest delay, but performance is not bad compared to other cities. Too many signals?
  - Harford and Frederick counties perform poorly.
- Strategies
  - More timing reviews – especially with post-covid changes
  - More focus on midday and Saturday. Schools?
  - More adaptive
  - Better signal maintenance
  - Better work zones
  - Incident response
  - Construction – unconventional designs and interchanges

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