

# OZONE SEASON SUMMARY 2020

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Sunil Kumar  
Principal Environmental Engineer

MWAQC-Technical Advisory Committee  
May 12, 2020

# Peak 8-Hour Average Ozone Levels (ppb)

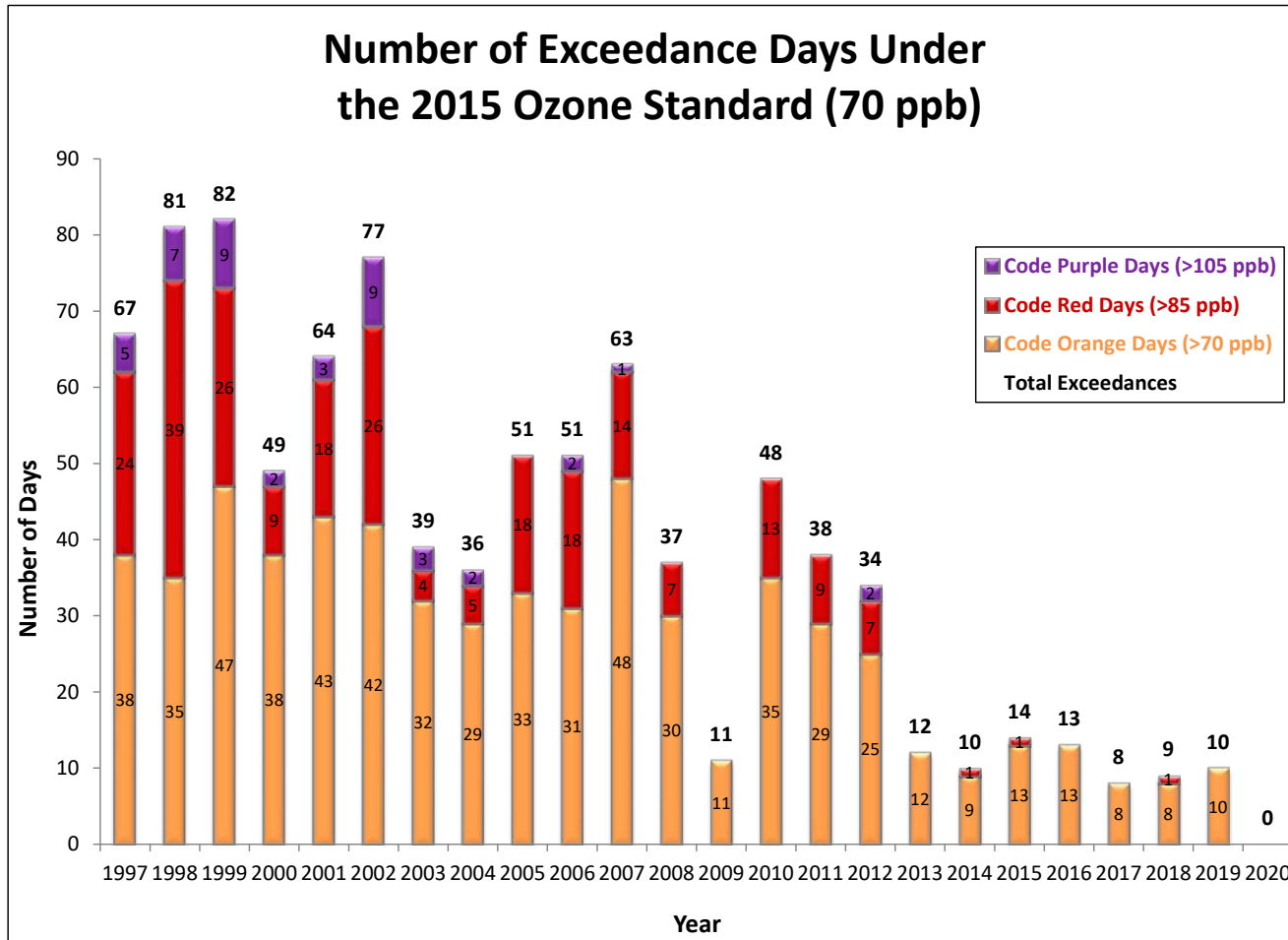
March 2020							April 2020							May 2020							
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
01	02	03	04	05	06	07	29	30	31	01	02	03	04	26	27	28	29	30	01	02	
44	52	40	44	42	39	43				40	48	50	36							39	49
08	09	10	11	12	13	14	05	06	07	08	09	10	11	03	04	05	06	07	08	09	
47	52	43	36	42	46	45	46	52	45	51	51	43	49	49	48	40	37	52	50	39	
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	
40	48	40	42	39	41	39	50	45	47	48	49	51	47	49							
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	
44	38	39	38	41	48	43	50	45	48	49	41	34	47								
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30	
38	49	40					38	40	40	51	46										
														31							

## All Code Green Days

Analysis is based on draft and incomplete data as of May 11, 2020.



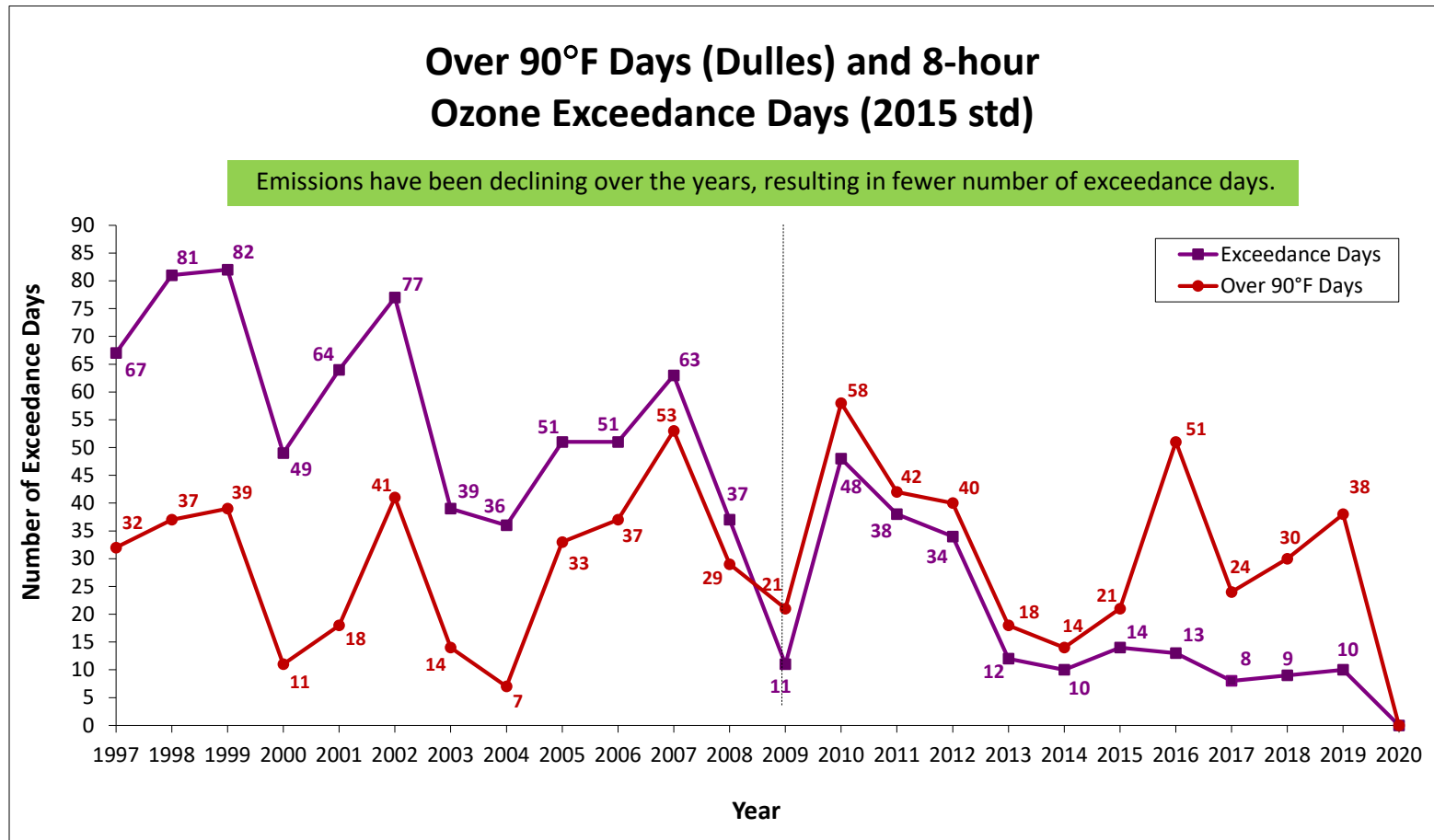
# Ozone Exceedance Trend



Analysis is based on draft and incomplete data as of May 11, 2020.

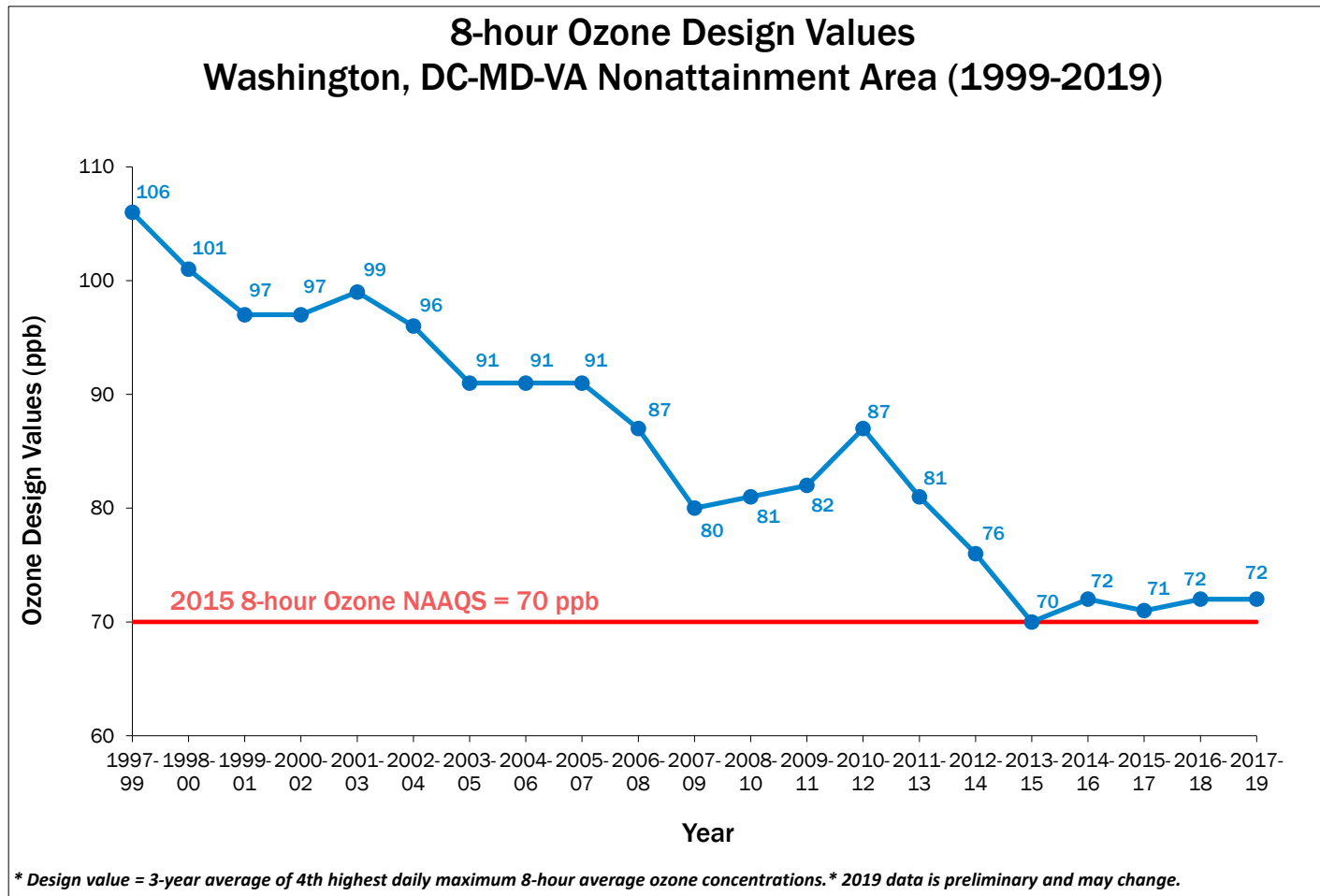


# Ozone & Temperature Trend



Analysis is based on draft and incomplete data as of May 11, 2020.

# Ozone Design Value Trend



# Why Fewer Exceedance Days Now ?

## Emission Control Programs

Federal	State	Local
Acid Rain Program (1996/2000)	Vehicle Inspection & Maintenance Programs	Renewable Energy Programs Regional Wind Power Purchase Program Clean Energy Rewards Program Renewable Portfolio Standards
Tier 2 (LD Vehicle) Rule (2004)	Maryland Healthy Air Act (2009/2012)	Energy Efficiency Programs LED Traffic Signal Retrofit program Building Energy Efficiency Programs
HD Diesel vehicle Rule (2004/2007)	Virginia CSAPR Rule	VRE Idling Reduction
NOX SIP Call (2004)	Ozone Transport Commission Rules	LOW VOC Paint
CAIR/CSAPR/CSAPR Update (2009/2015/2017)		Gas Can Replacement



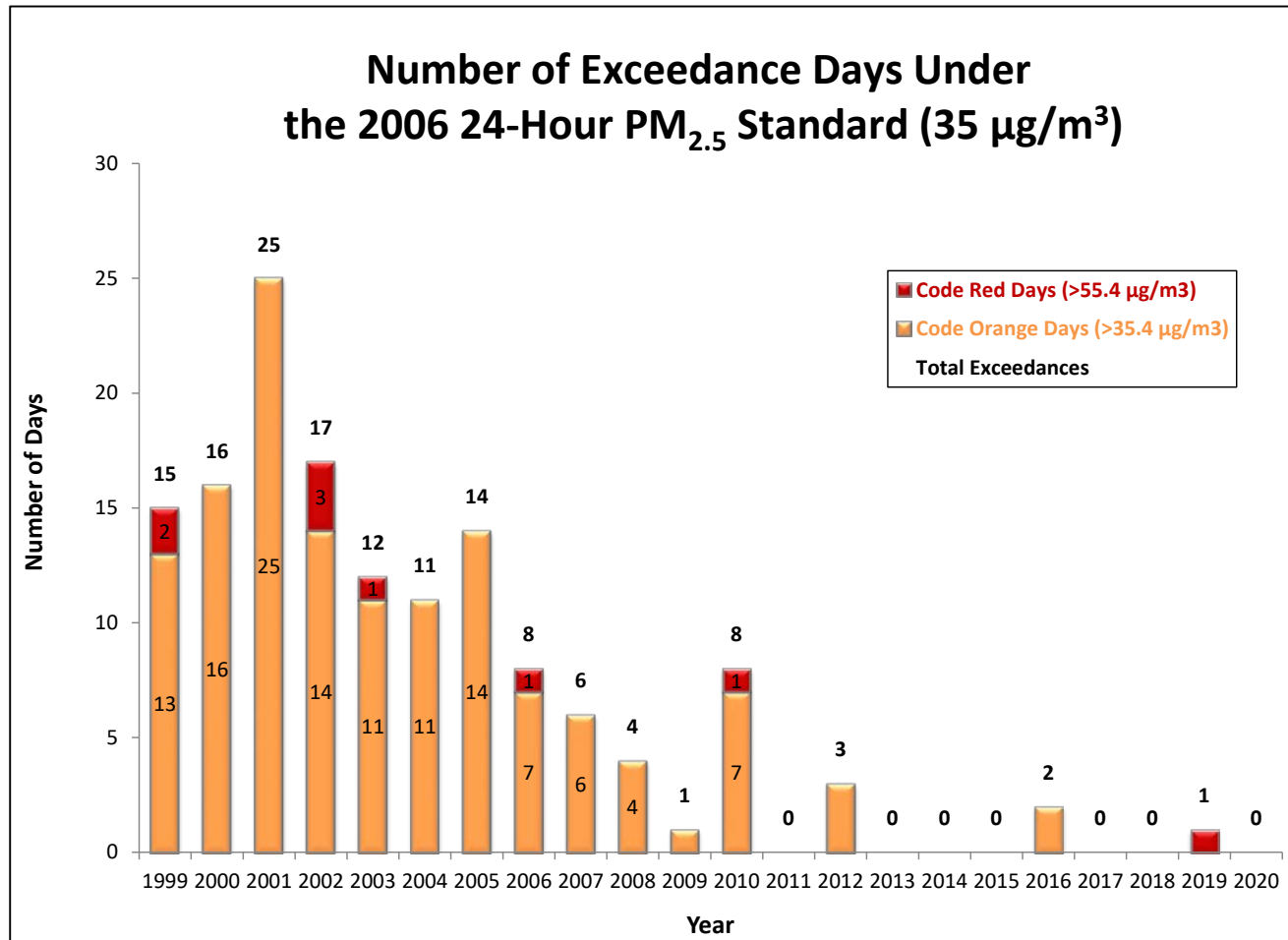
# 24-Hour Average PM2.5 Levels ( $\mu\text{g}/\text{m}^3$ )

March 2020							April 2020							May 2020						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
01	02	03	04	05	06	07	29	30	31	01	02	03	04	26	27	28	29	30	01	02
6.2	10.9	9.4	3.4	7.7	9.3	4.0				6.6	4.2	3.1	3.1						3.5	5.6
08	09	10	11	12	13	14	05	06	07	08	09	10	11	03	04	05	06	07	08	09
7.6	8.0	7.9	7.7	10.3	6.9	4.7	6.2	6.9	10.9	6.5	7.4	4.2	7.8	8.9	4.4	5.2	4.6	5.3	6.6	4.3
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
8.1	6.7	7.7	8.4	13.1	10.6	5.2	10.0	3.9	5.3	6.8	7.9	9.5	8.5	5.1						
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
6.8	5.0	6.7	6.0	10.9	6.9	8.8	8.6	10.2	6.9	5.1	7.1	3.9	7.0							
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30
9.4	6.5	4.3					4.0	3.1	6.0	8.3	5.1									
														31						

1 Code Yellow Day, rest all Code Green Days

Analysis is based on draft and incomplete data as of May 11, 2020.

# PM2.5 Exceedance Trend

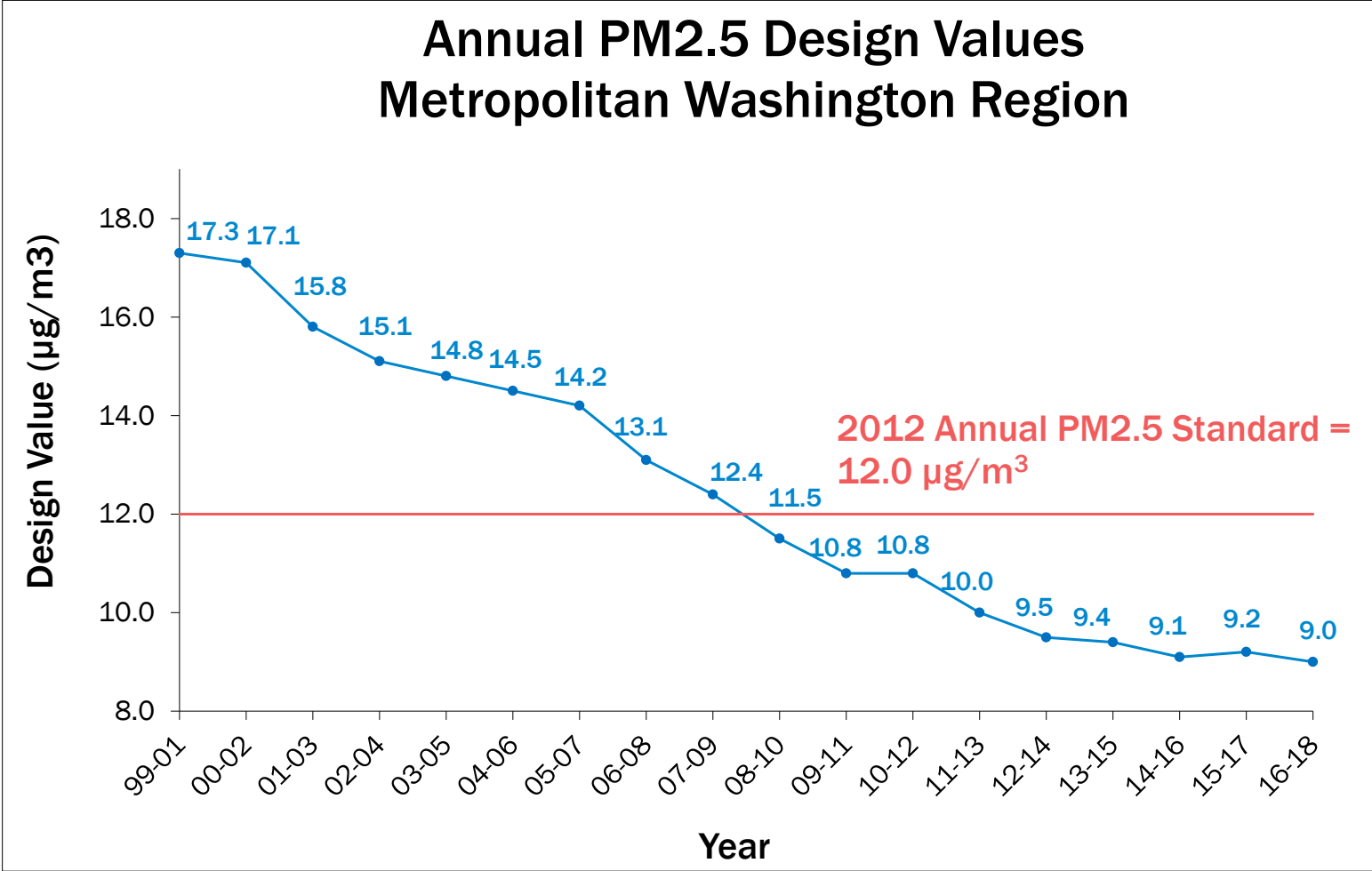


Analysis is based on draft and incomplete data as of May 11, 2020.

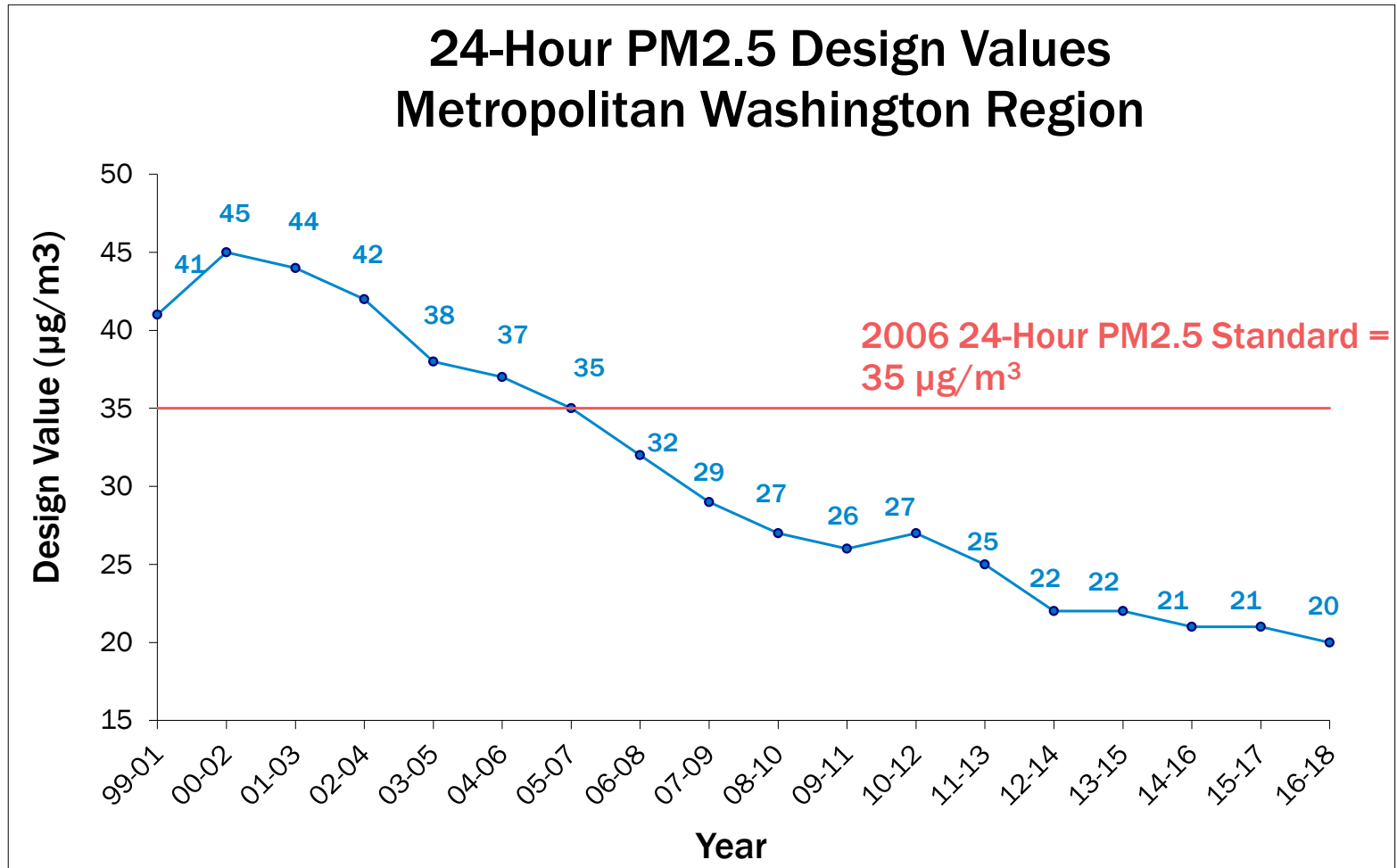




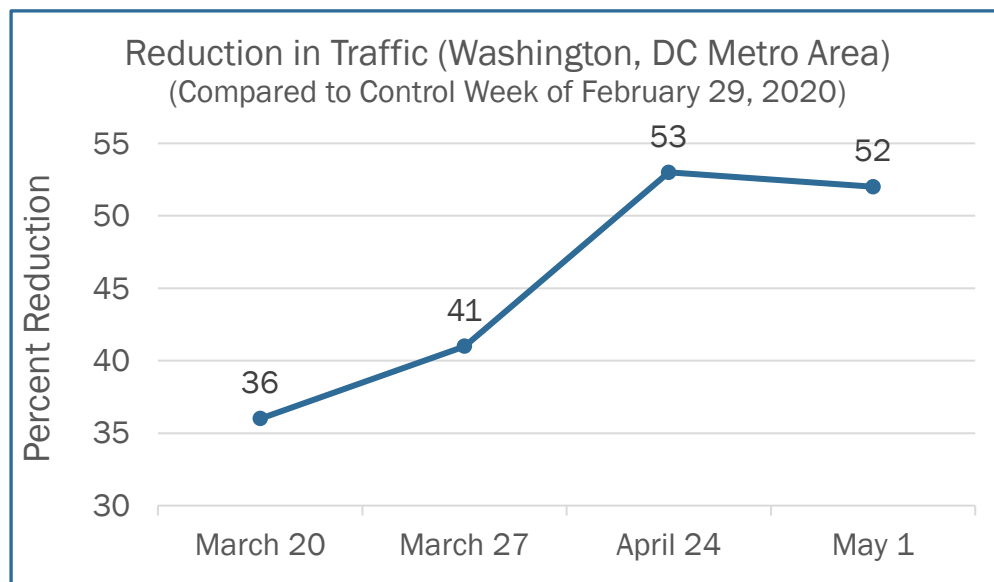
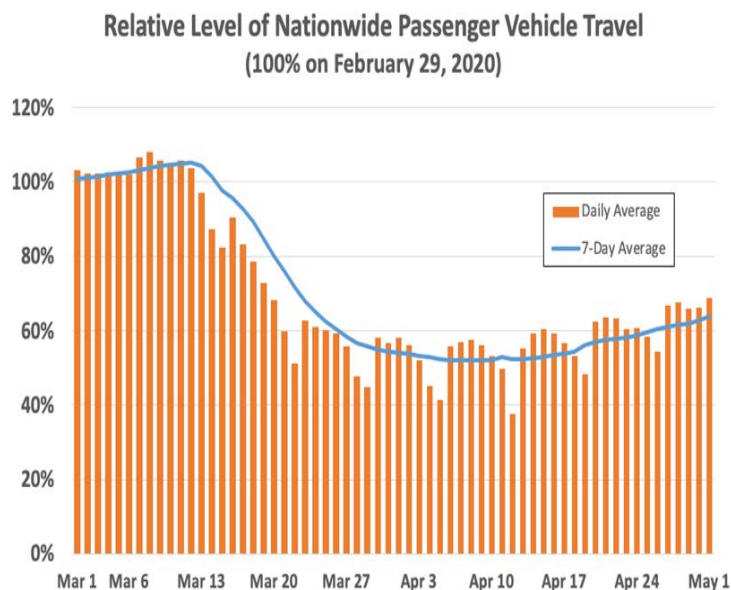
# Annual PM2.5 Design Value Trend



# 24-Hour PM2.5 Design Value Trend



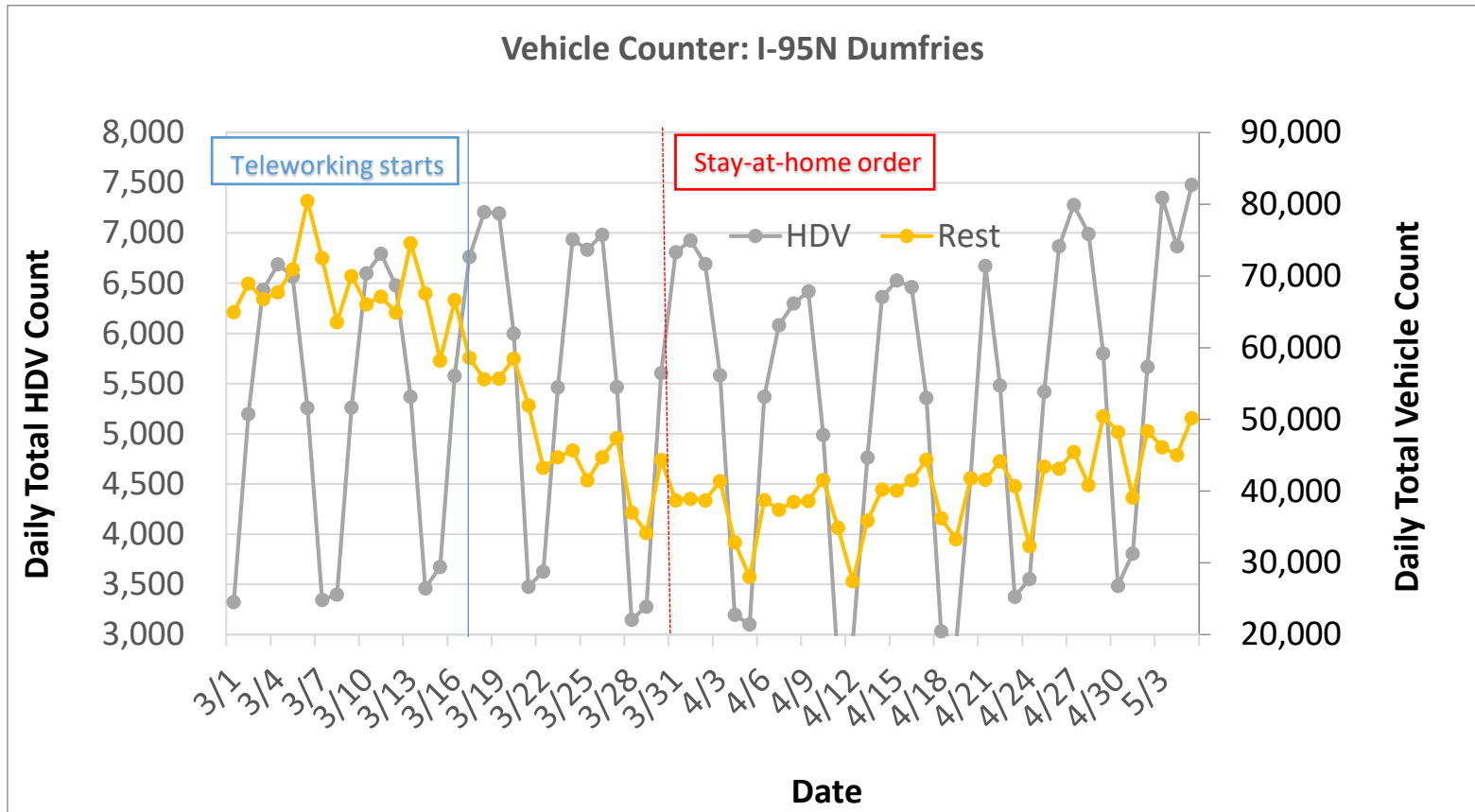
# IMPACT ON ON-ROAD SECTOR



- Source: INRIX

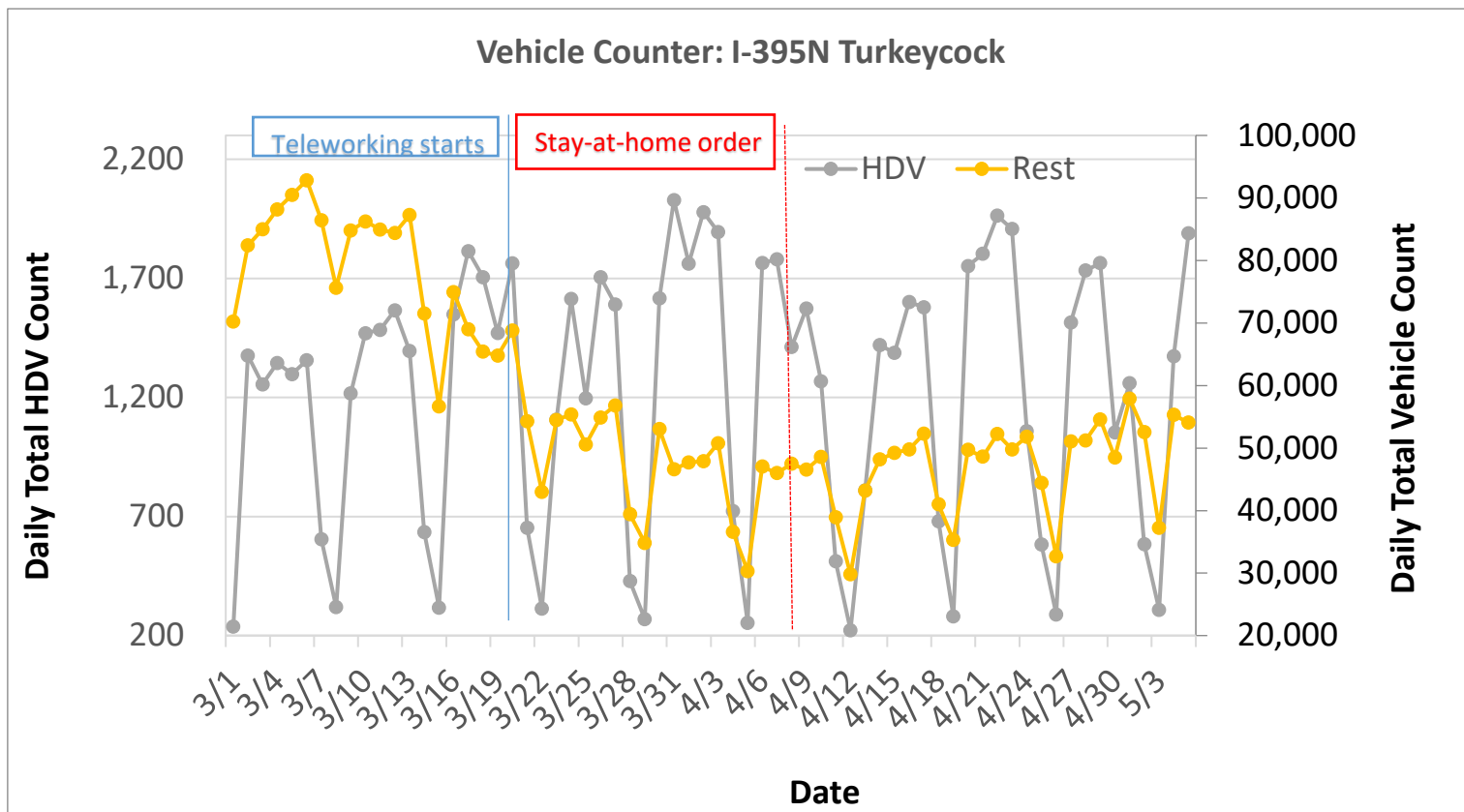


# IMPACT ON ON-ROAD SECTOR



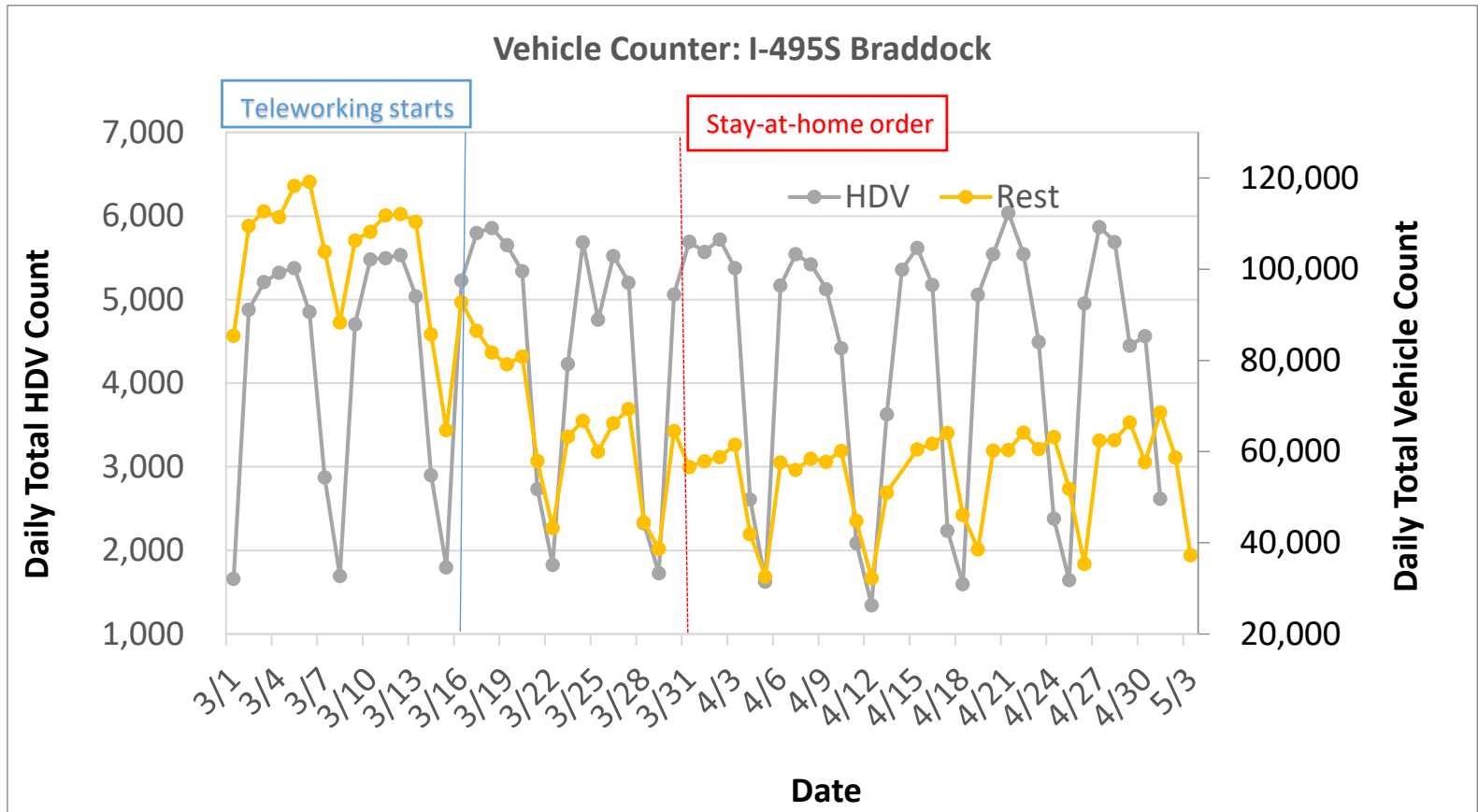
- Both heavy-duty and other vehicle traffic seem to be increasing after a decrease during the early to mid April. Source: VDOT

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# IMPACT ON ON-ROAD SECTOR

## Daily Volume for Northern Virginia - Wednesday

	03/18/20	03/25/20	04/01/20	04/08/20	04/15/20	04/22/20	04/29/20
Observed Volume	1,249K	926K	883K	888K	870K	949K	1,004K
% Change from 2019	-29.0%	-47.4%	-50.9%	-50.7%	-48.6%	-44.8%	-42.5%
# of Links Reporting	55	55	55	55	52	52	54

Select District: Northern Virginia

Day of Week: Wednesday

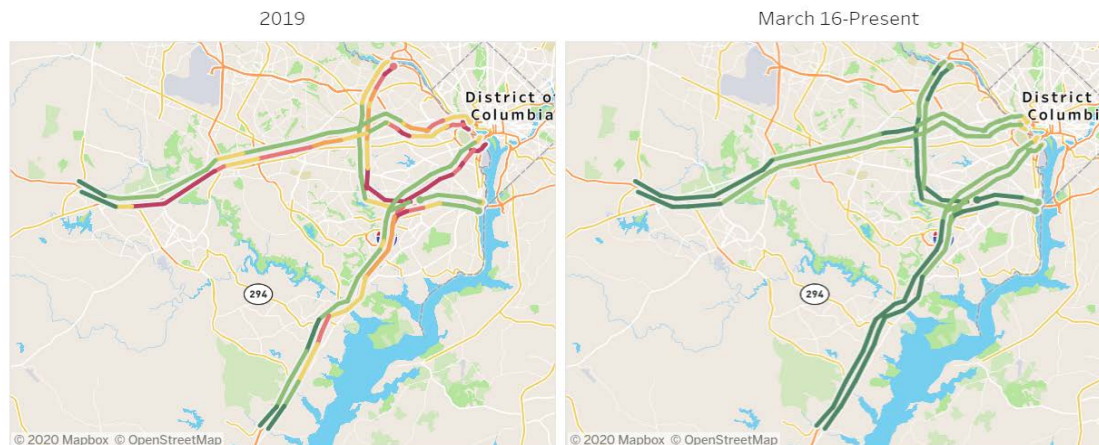
Select Hour: 8

Average Daily Vehicle Hours of Delay - Wednesday

	2019	3/18/2020	3/25/2020	4/1/2020	4/8/2020	4/15/2020	4/22/2020
I-66	12,300	200	100	0	0	0	100
I-95	11,500	1,300	200	0	0	600	1,200
I-395	2,100	0	0	0	0	0	100
I-495	8,000	0	0	0	0	0	0
<b>Grand Total</b>	<b>33,900</b>	<b>1,500</b>	<b>300</b>	<b>0</b>	<b>100</b>	<b>600</b>	<b>1,300</b>

- <25 mph
- 25-35 mph
- 35-45 mph
- 45-55 mph
- 55-65 mph
- >65 mph

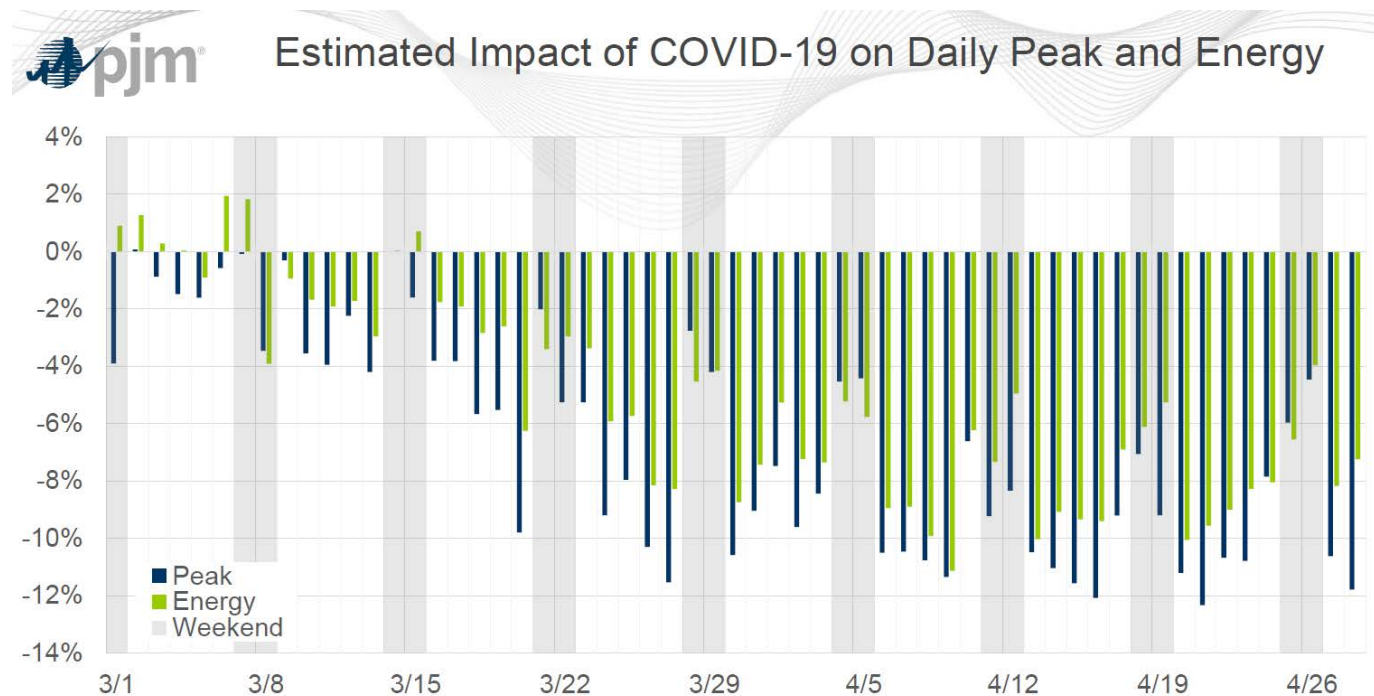
Speed Comparison on Wednesdays at 8:00



- Traffic count shows downward trend in northern Virginia. Much less congestion now. Source: VDOT

# IMPACT ON POINT & NON-POINT SECTORS

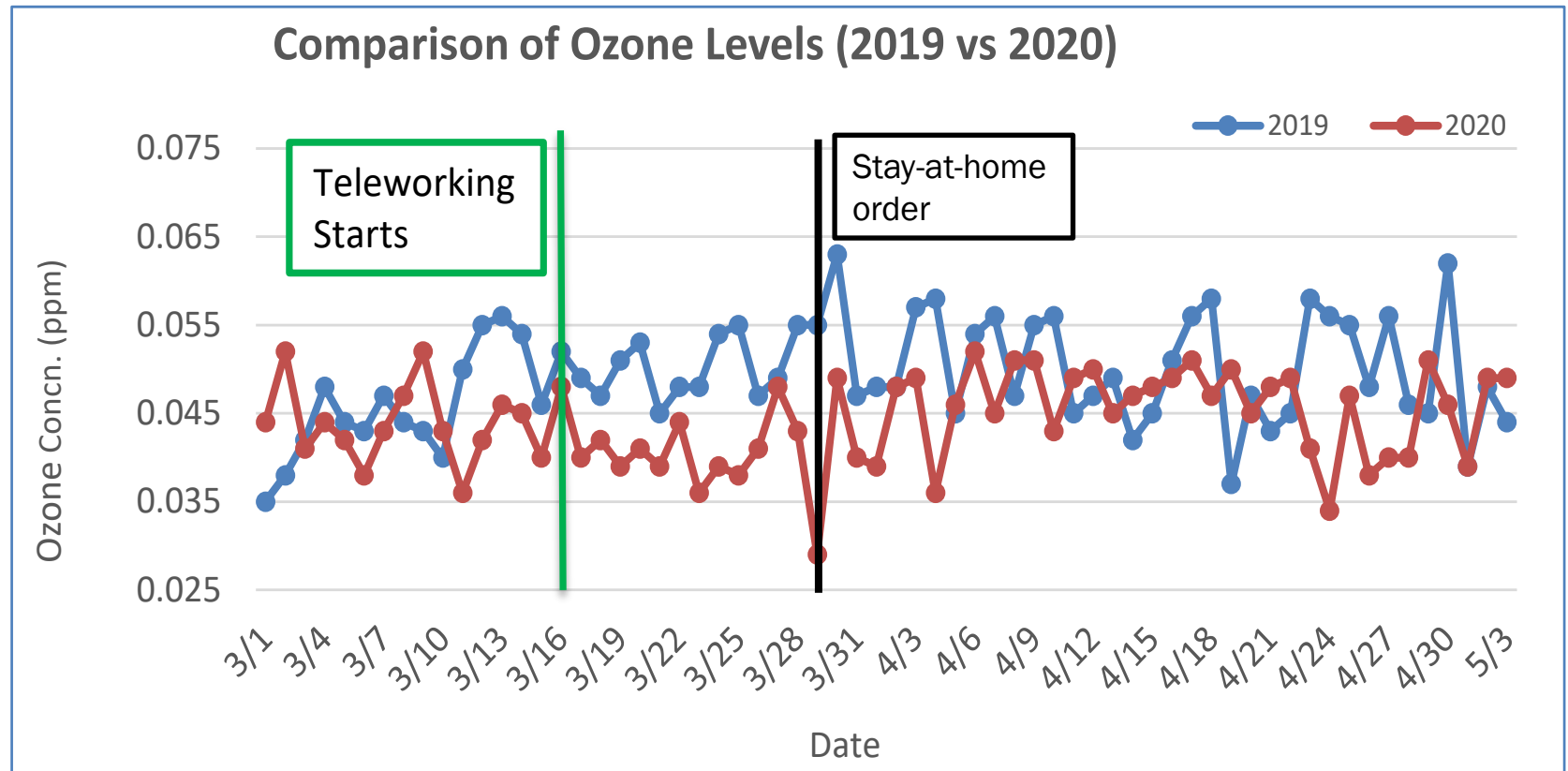
- There has also been impact on the energy consumption in the region due to office and business closures and people teleworking/staying at home. Electricity consumption is lower compared to pre-COVID-19 period.



- Source: PJM Report “Estimated Impact of COVID19”, May 5, 2020



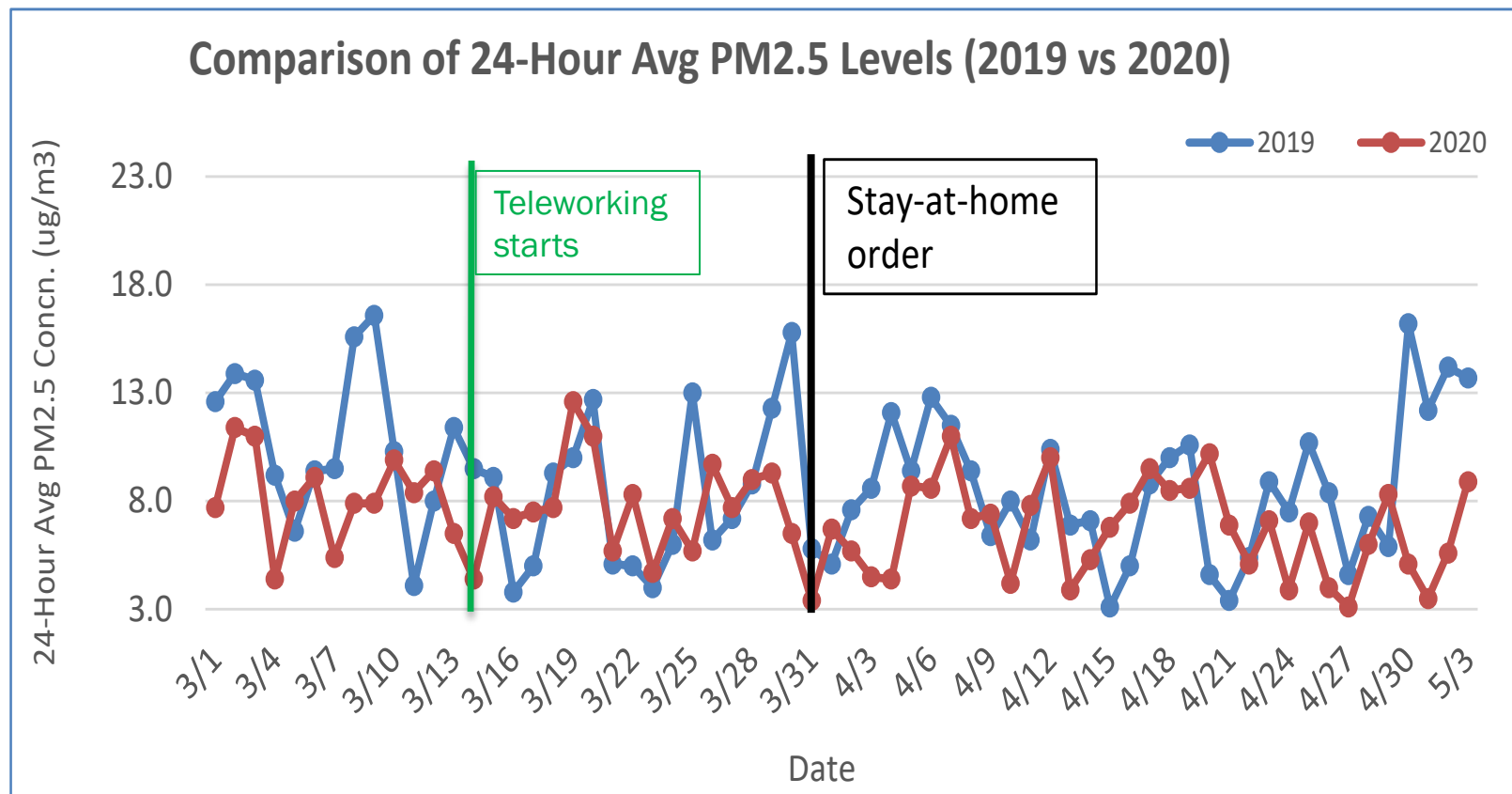
# COVID-19 & OZONE LEVELS



- Draft 2020 ozone levels mostly lower compared to 2019 both before and after lockdown. Role of weather needs to be studied.



# COVID-19 & PM2.5 LEVELS



- Draft 2020 PM2.5 levels generally lower. Role of weather needs to be studied.