

# Attachment B.

## NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

### MEMORANDUM

**FOR:** Chair Phyllis J. Randall and Members  
Northern Virginia Transportation Authority

**FROM:** Michael Longhi, Chief Financial Officer

**DATE:** March 5, 2020

**SUBJECT:** Monthly Revenue Report

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1. **Purpose:** To update the Northern Virginia Transportation Authority (NVTA) on monthly revenue receipts and 30% funds distributed to member localities.
2. **Background:** The attached reports reflect funding received and distributed through January 2020. December receipts represent four months of FY2020 Sales Tax revenue.
3. **Comments:**
  - a. **FY2020 Revenues (Attachment A)**
    - i. The Authority has received approximately \$120.2 million through the January 2020 transfers from the Commonwealth.
    - ii. Actual revenue (five months of sales tax receipts) to estimate comparison of annual sales tax revenues through January 2020 shows an 8.5% positive variance in receipts compared to the FY2020 adopted revenue projections.
    - iii. The positive variance can be greatly attributed to the newly taxed internet sales but NVTA lacks the data to differentiate the internet sales from the annual growth experienced in the past.
    - iv. Revenue related to Heavy Truck Registration and Diesel Fuel (SB1716) has not materialized at the level to support Commonwealth projections for FY2020. The chart below summarizes actual receipts compared to the Commonwealth's projections.

<b>VDOT Projections of I-81 Related Revenue to NVTA</b>				
(All \$ in millions, as of January 28, 2020)				
	VDOT		Actual Receipts***	Projected Year End
	Total Projection*	YTD Projection**		
<b>FY2020</b>	\$ 9.4	\$ 3.9	\$ 1.0	\$ 2.4
<b>FY2021</b>	\$ 13.8			
<b>FY2022</b>	\$ 19.5			
<b>FY2023</b>	\$ 19.7			
<b>FY2024</b>	\$ 19.4			
<b>FY2025</b>	\$ 19.6			

\*Presentation by VDOT CFO Laura Farmer to the CTB - June 18, 2019

\*\*Based on Total Projection / 12 months

\*\*\*CoVA reports 5 months of receipts

- b. FY2020 Distribution to localities (Attachment B)**
  - i. Eight jurisdictions have completed the required annual HB2313 certification to receive FY2020 Local Distribution Funds (30%). The remaining jurisdiction has been contacted and is aware of the deadlines.
  - ii. As of January 2020, approximately \$35.4 million of the \$36.4 million of 30% local distribution funds have been distributed to member jurisdictions.
  
- c. FY2015 to FY2020 Year over Year Revenue Comparison (Attachment C).** This chart reflects a month-to-month comparison of sales tax revenue and a year-to-year comparison of fiscal year to date revenues received through January 2020.
  
- d. Sales Tax Forecast Model V. Projection (Attachment D).** This chart reflects tracking of current fiscal year revenue on an actual to projection basis. A statistical packet called Palisade's Stat Tools is now used to improve the accuracy of the tracking. The reports from the tool are forecasting actual revenue to exceed NVTA projections. However, the tool is unable segregate usual annual growth in sales tax from the newly implemented internet sales tax receipts.

**Attachments:**

- A. Sales Tax Revenues Received Compared to NVTA Estimates, Through January 2020
- B. FY2020 30% Distribution by Jurisdiction, through January 2020
- C. Month to Month Comparison of Sales Tax Revenue and YTD Receipts for January 2015 to 2020
- D. Palisade's Stat Tool Analysis of FY2020 Revenue Actual to Projections

# Attachment B1.

**NORTHERN VIRGINIA TRANSPORTATION AUTHORITY**  
**SALES TAX REVENUES RECEIVED BY JURISDICTION, COMPARED TO NVTA ESTIMATES**  
 Based on: Revenue Data Through January 2020  
 FYE June 30, 2020

Regional Sales Tax		Received	Annualized Revenue based	FY2020	Annualized - Actual	
Transaction Months	5	To Date	on YTD Receipts	Budget	To Budget	
City of Alexandria		\$ 7,775,549	\$ 18,661,318	\$ 16,379,177	\$ 2,282,141	
Arlington County		12,411,459	29,787,502	25,943,302	3,844,200	
City of Fairfax		3,148,459	7,556,301	7,506,931	49,370	
Fairfax County		50,770,932	121,850,238	114,583,396	7,266,842	
City of Falls Church		1,395,213	3,348,512	2,777,700	570,812	
Loudoun County		23,433,441	56,240,258	52,470,000	3,770,258	
City of Manassas		2,646,050	6,350,521	5,202,000	1,148,521	
City of Manassas Park		665,806	1,597,934	1,469,727	128,207	
Prince William County		17,916,340	42,999,216	39,514,160	3,485,056	
Total Sales Tax Revenue		\$ 120,163,250	\$ 288,391,801	\$ 265,846,393	\$ 22,545,408	8.5%

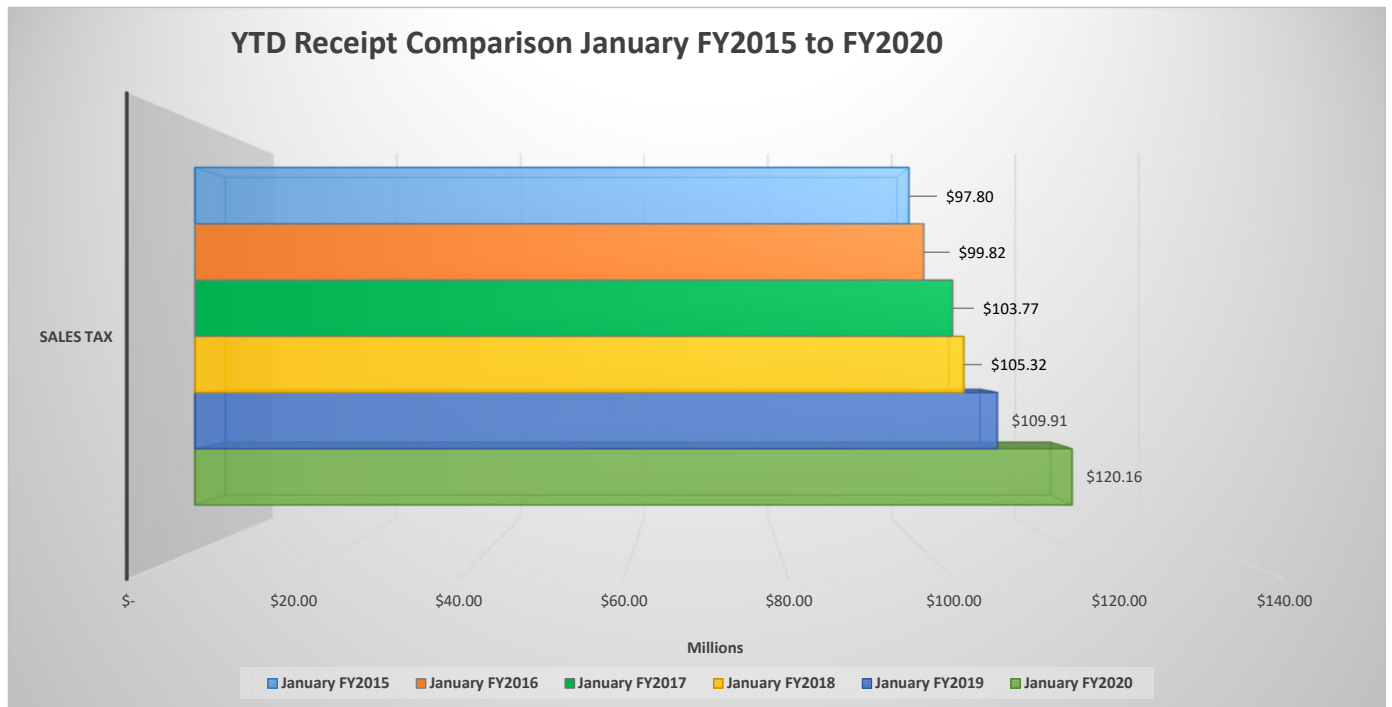
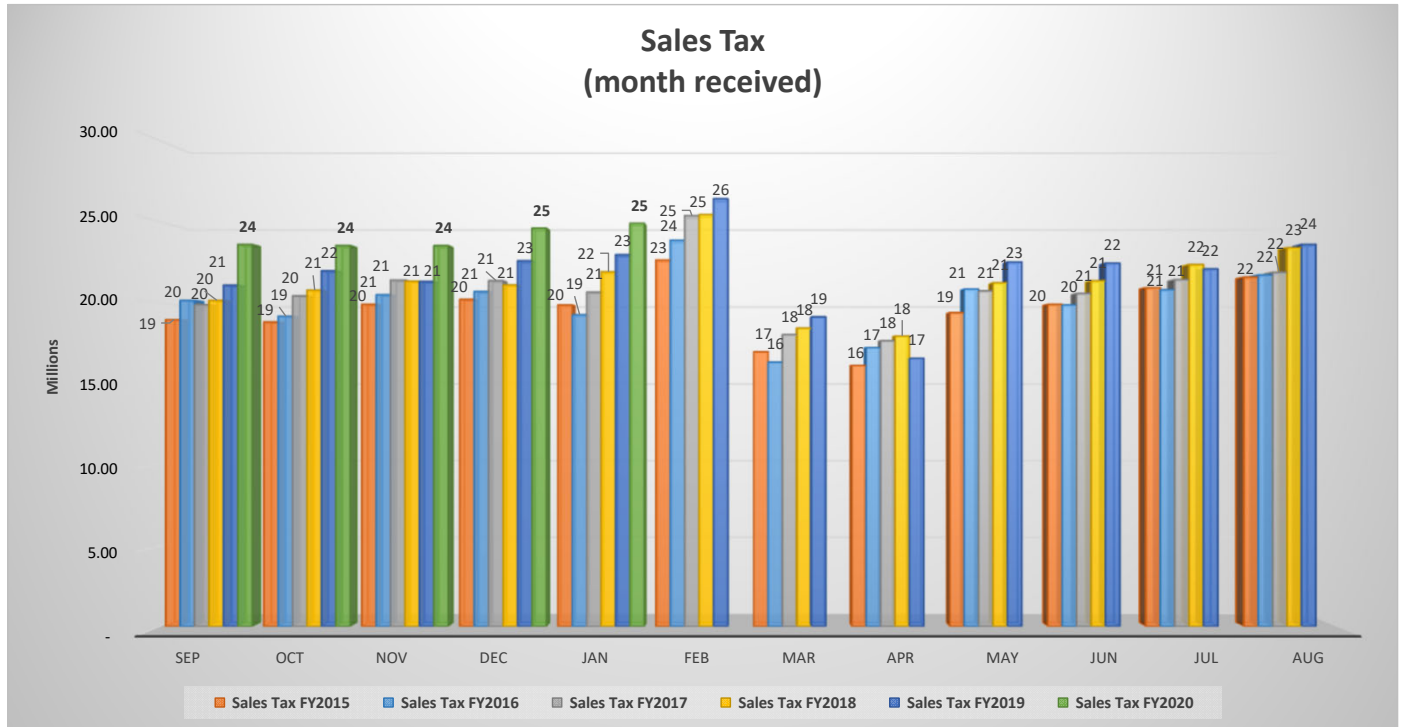
Vehicle License-Registration Fees		Received	Annualized Revenue based	FY2020	Annualized - Actual	
Transaction Months	5	To Date	on YTD Receipts	Budget	To Budget	
City of Alexandria		\$ 67,580	\$ 162,192	\$ 564,162	\$ (401,970)	
Arlington County		\$ 105,915	254,197	932,871	(678,674)	
City of Fairfax		\$ 26,777	64,265	248,699	(184,433)	
Fairfax County		\$ 428,147	1,027,553	3,850,016	(2,822,463)	
City of Falls Church		\$ 12,079	28,988	88,448	(59,460)	
Loudoun County		\$ 200,643	481,542	1,768,831	(1,287,289)	
City of Manassas		\$ 22,888	54,931	170,283	(115,351)	
City of Manassas Park		\$ 5,631	13,515	52,506	(38,991)	
Prince William County		\$ 149,284	358,281	1,324,184	(965,903)	
Total Vehicle License-Registration Fees		\$ 1,018,944	\$ 2,445,465	\$ 9,000,000	\$ (6,554,535)	-72.8%
Total Revenue Received		\$ 121,182,194	\$ 290,837,266	\$ 274,846,393	\$ 15,990,873	5.82%
		\$ 121,182,194				

## Attachment B2.

**NORTHERN VIRGINIA TRANSPORTATION AUTHORITY  
FY2020 30% DISTRIBUTION BY JURISDICTION**

Based on: Revenue Data Through January 2020

Jurisdiction	Vehicle License- Registration Fee	Regional Sales Tax		NVTA Fund Interest	Cumulative Total	30% Funds	12/31/2019 Accrued Interest (1)	12/31/2019 Prior Distributions	Current Month Distribution	Total Funds Transferred
							(+)			
City of Alexandria	\$ 67,580.05	\$ 7,775,549.20	\$ -	\$ 9,938.97	\$ 7,853,068.22	\$ 2,355,920.47	\$ 598.21	\$1,867,852.78	\$ 488,665.90	\$ 2,356,518.68
Arlington County	\$ 105,915.25	\$ 12,411,459.37	\$ -	\$ 15,625.68	\$ 12,533,000.30	\$ 3,759,900.09	\$ 997.02	\$3,002,739.91	\$ 758,157.20	\$ 3,760,897.11
City of Fairfax	\$ 26,777.24	\$ 3,148,458.74	\$ -	\$ 4,238.02	\$ 3,179,474.00	\$ 953,842.20	\$ 299.11		\$ 954,141.31	
Fairfax County	\$ 428,147.25	\$ 50,770,932.41	\$ -	\$ 64,416.67	\$ 51,263,496.33	\$ 15,379,048.90	\$ 4,187.47	\$12,178,333.99	\$ 3,204,902.38	\$ 15,383,236.37
City of Falls Church	\$ 12,078.54	\$ 1,395,213.16	\$ -	\$ 1,812.67	\$ 1,409,104.37	\$ 422,731.31	\$ 99.70	\$335,127.40	\$ 87,703.61	\$ 422,831.01
Loudoun County	\$ 200,642.65	\$ 23,433,440.91	\$ -	\$ 30,409.47	\$ 23,664,493.03	\$ 7,099,347.91	\$ 1,994.04	\$5,643,380.32	\$ 1,457,961.63	\$ 7,101,341.95
City of Manassas	\$ 22,888.02	\$ 2,646,050.32	\$ -	\$ 3,516.27	\$ 2,672,454.61	\$ 801,736.38	\$ 199.40	\$654,694.20	\$ 147,241.58	\$ 801,935.78
City of Manassas Park	\$ 5,631.15	\$ 665,806.02	\$ -	\$ 876.25	\$ 672,313.42	\$ 201,694.03	\$ 99.70	\$165,689.52	\$ 36,104.21	\$201,793.73
Prince William County	\$ 149,283.79	\$ 17,916,340.20	\$ -	\$ 22,679.83	\$ 18,088,303.82	\$ 5,426,491.15	\$ 1,495.53	\$4,270,769.29	\$ 1,157,217.39	\$ 5,427,986.68
Total Revenue	\$ 1,018,943.94	\$ 120,163,250.33	\$ -	\$ 153,513.83	\$ 121,335,708.10	\$ 36,400,712.43	\$ 9,970.18	\$ 28,118,587.41	\$ 8,597,778.39	\$ 35,456,541.31
	Interest 12/31/2019									



## Attachment B4.

NVTAs Sales Tax Revenue Forecast: Model vs Actual vs Projection											
FY	Forecasting Data	Monthly Actual	Model Factors			Monthly Model Forecast	Statistical Variance	End of Year		Actual YTD	
			Level	Trend	Season			Model Forecast	NVTA Projected		
	Sep-2017	\$20,154,895.20	20,905,908.90	80,791	0.98	\$20,591,363	-436,468			\$20,154,895	
	Oct-2017	\$20,786,302.49	20,990,927.14	80,791	0.99	\$20,771,698	14,605			\$40,941,198	
	Nov-2017	\$21,343,035.02	21,056,754.24	80,791	1.02	\$21,396,074	-53,039			\$62,284,233	
	Dec-2017	\$21,115,954.89	20,974,298.50	80,791	1.03	\$21,700,990	-585,035			\$83,400,188	
	Jan-2018	\$21,915,158.59	21,227,738.59	80,791	1.01	\$21,305,331	609,828			\$105,315,346	
	Feb-2018	\$25,453,242.98	21,252,013.39	80,791	1.21	\$25,691,099	-237,856			\$130,768,589	
	Mar-2018	\$18,454,177.89	21,388,059.90	80,791	0.86	\$18,288,820	165,358			\$149,222,767	
	Apr-2018	\$17,961,787.93	21,568,857.32	80,791	0.82	\$17,674,395	287,392			\$167,184,555	
	May-2018	\$21,248,451.07	21,517,419.18	80,791	1.00	\$21,711,338	-462,887			\$188,433,006	
	Jun-2018	\$21,365,953.89	21,568,466.48	80,791	0.99	\$21,469,160	-103,206			\$209,798,960	
	Jul-2018	\$22,367,630.32	21,701,747.26	80,791	1.02	\$22,179,914	187,717			\$232,166,590	
<b>FY18</b>	Aug-2018	\$23,408,268.73	21,811,254.81	80,791	1.07	\$23,301,040	107,228	\$256,081,222	\$255,571,902	<b>\$255,574,859</b>	
	Sep-2018	\$21,094,228.16	21,793,283.80	80,791	0.98	\$21,431,728	-337,499			\$21,094,228	
	Oct-2018	\$21,988,380.92	21,972,021.44	80,791	0.99	\$21,649,982	338,399			\$43,082,609	
	Nov-2018	\$21,319,898.61	21,750,261.16	80,791	1.02	\$22,392,270	-1,072,371			\$64,402,508	
	Dec-2018	\$22,602,475.35	21,883,927.83	80,791	1.03	\$22,412,983	189,493			\$87,004,983	
	Jan-2019	\$22,970,788.81	22,175,641.68	80,791	1.01	\$22,225,771	745,018			\$109,975,772	
	Feb-2019	\$26,427,800.56	22,159,926.61	80,791	1.21	\$26,833,960	-406,159			\$136,403,572	
	Mar-2019	\$19,145,453.91	22,266,872.48	80,791	0.86	\$19,067,183	78,271			\$155,549,026	
	Apr-2019	\$16,589,175.00	21,718,271.67	80,791	0.82	\$18,397,885	-1,808,710			\$172,138,201	
	May-2019	\$22,525,822.45	21,988,926.24	80,791	1.00	\$21,861,178	664,644			\$194,664,024	
	Jun-2019	\$22,453,420.16	22,218,303.60	80,791	0.99	\$21,937,850	515,570			\$217,117,444	
	Jul-2019	\$22,103,784.06	22,091,644.54	80,791	1.02	\$22,845,679	-741,895			\$239,221,228	
<b>FY19</b>	Aug-2019	\$23,605,506.73	22,142,277.55	80,791	1.07	\$23,718,118	-112,611	\$264,774,585	\$258,926,224*	<b>\$262,826,735</b>	
	Sep-2019	\$23,603,917.67	22,763,884.18	80,791	0.98	\$21,755,790	1,848,128			\$23,603,918	
	Oct-2019	\$23,492,820.82	23,100,014.98	80,791	0.99	\$22,610,639	882,182			\$47,096,738	
	Nov-2019	\$23,534,125.70	23,179,818.34	80,791	1.02	\$23,537,627	-3,501			\$70,630,864	
	Dec-2019	\$24,619,413.33	23,466,753.33	80,791	1.03	\$23,880,646	738,767			\$95,250,278	
	Jan-2020	\$24,919,875.09	23,856,833.75	80,791	1.01	\$23,827,408	1,092,467			\$120,170,152.61	
	Feb-2020					\$28,860,926					
	Mar-2020					\$20,591,221					
	Apr-2020					\$19,839,856					
	May-2020					\$24,248,898					
	Jun-2020					\$24,115,830					
	Jul-2020					\$24,938,229					
<b>FY20</b>	Aug-2020	<b>*Current Fiscal Year Projection</b>					\$26,124,901		\$284,331,970	\$265,846,393*	

## NVTA Sales Tax Revenue Forecast 2014-2020: Model Observations

### Winters' Exponential Smoothing Forecast

#### Forecasting Constants (Optimized)

Level (Alpha)	0.286
Trend (Beta)	0.000
Season (Gamma)	0.000

#### Winters' Exponential

Mean Abs Err	\$445,428.03
Root Mean Sq Err	\$600,942.09
Mean Abs Per% Err	2.15%

### Description:

The Holt-Winters models three aspects of a time series: a typical value (average), a slope (trend) over time, and a cyclical repeating pattern (seasonality). Holt Winters uses exponential smoothing to encode values from the past and use them to predict "typical" values for the present and future.

### Forecast and Original Observations



### Original Observations

