

**NORTHERN VIRGINIA TRANSPORTATION AUTHORITY****MEMORANDUM**

**FOR:** Chairman Martin E. Nohe and Members  
Northern Virginia Transportation Authority

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

**DATE:** December 5, 2019

**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 October 2019. October receipts represent two months of FY2020 Sales Tax receipts.
3. **Comments:**
  - a. **FY2020 Revenues (Attachment A)**
    - i. The Authority has received approximately \$47.1 million through the October 2019 transfers from the Commonwealth.
    - ii. Actual revenue (two months of sales tax receipts) to estimate comparison of annual sales tax revenues through October 2019 show a 6.3% positive variance in receipts compared to the FY2020 adopted revenue projections.
    - iii. It is too early in the revenue cycle to rely on the positive variance to be sustained through the remaining 10 months. Monthly receipts will be monitored closely to determine if the increase is attributable to the newly taxed internet sales.
    - iv. Revenue related to Heavy Truck Registration and Diesel Fuel (SB1716) has not materialized at the level expected to support Commonwealth projections for FY2020. However, it is extremely early in the cycle for this first-time revenue source. VDOT is preparing an analysis of the receipts and should be sharing the results before the end of the month.
    - v. Tracking of current fiscal year revenue on an actual to projection basis has been substantially improved through the use of a statistical packet called Palisade's Stat Tools. The tool was previously back tested against prior revenues to confirm its utility and accuracy. Reports from the tool are included in Attachment D.
  - b. **FY2020 Distribution to localities (Attachment B)**
    - i. Seven jurisdictions have completed the required annual HB2313 certification to receive FY2020 Local Distribution Funds (30%). The two remaining jurisdictions have been contacted and are aware of the deadlines.
    - ii. As of October 2019, approximately \$12.4 million of the \$14.3 million of 30% local distribution funds have been distributed to member jurisdictions.

**c. FY2015 to FY2020 Year over Year Revenue Comparison (Attachment C).**

- i. 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 October 2019.

**Attachments:**

- A. Sales Tax Revenues Received Compared to NVTA Estimates, Through October 2019
- B. FY2020 30% Distribution by Jurisdiction, through October 2019
- C. Month to Month Comparison of Sales Tax Revenue and YTD Receipts for October 2015 to 2019
- D. Palisade's Stat Tool Analysis of FY2020 Revenue Actual to Projections

# Attachment A

**NORTHERN VIRGINIA TRANSPORTATION AUTHORITY**  
**SALES TAX REVENUES RECEIVED BY JURISDICTION, COMPARED TO NVTA ESTIMATES**  
 Based on: Revenue Data Through October 2019  
 FYE June 30, 2020

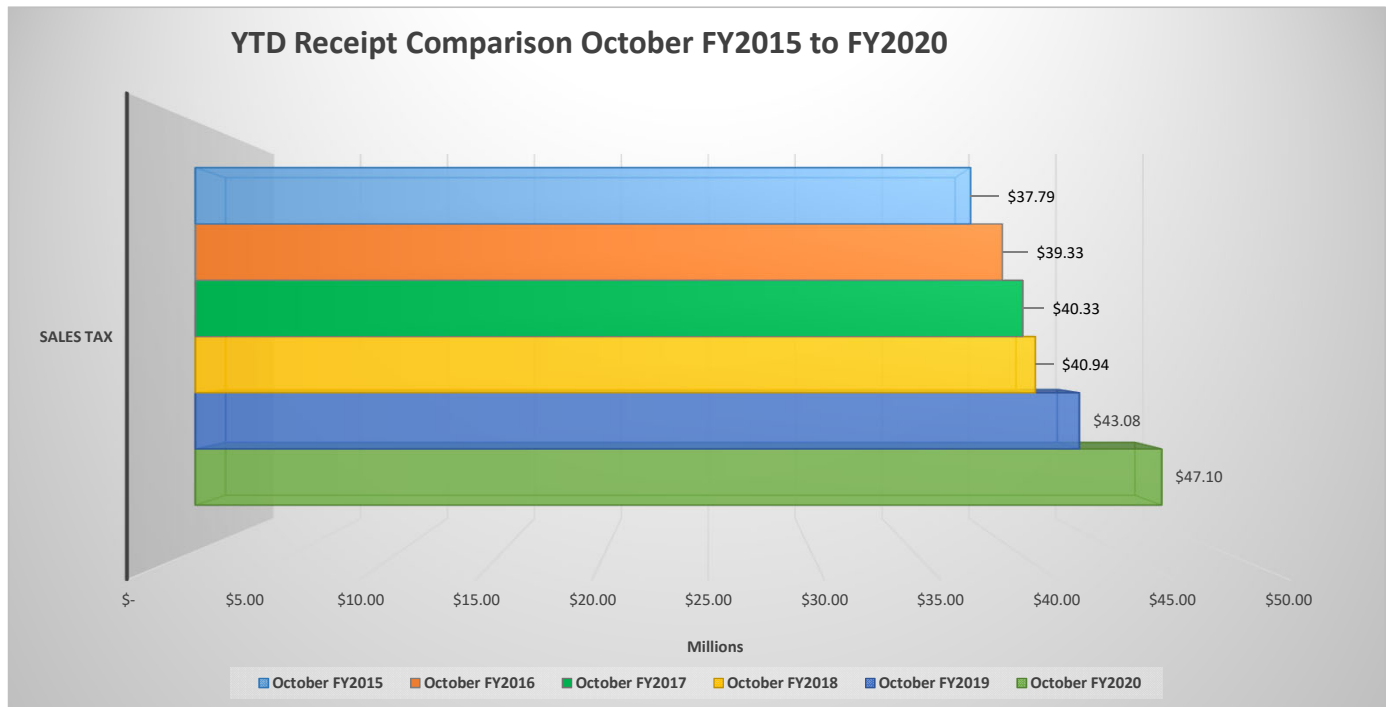
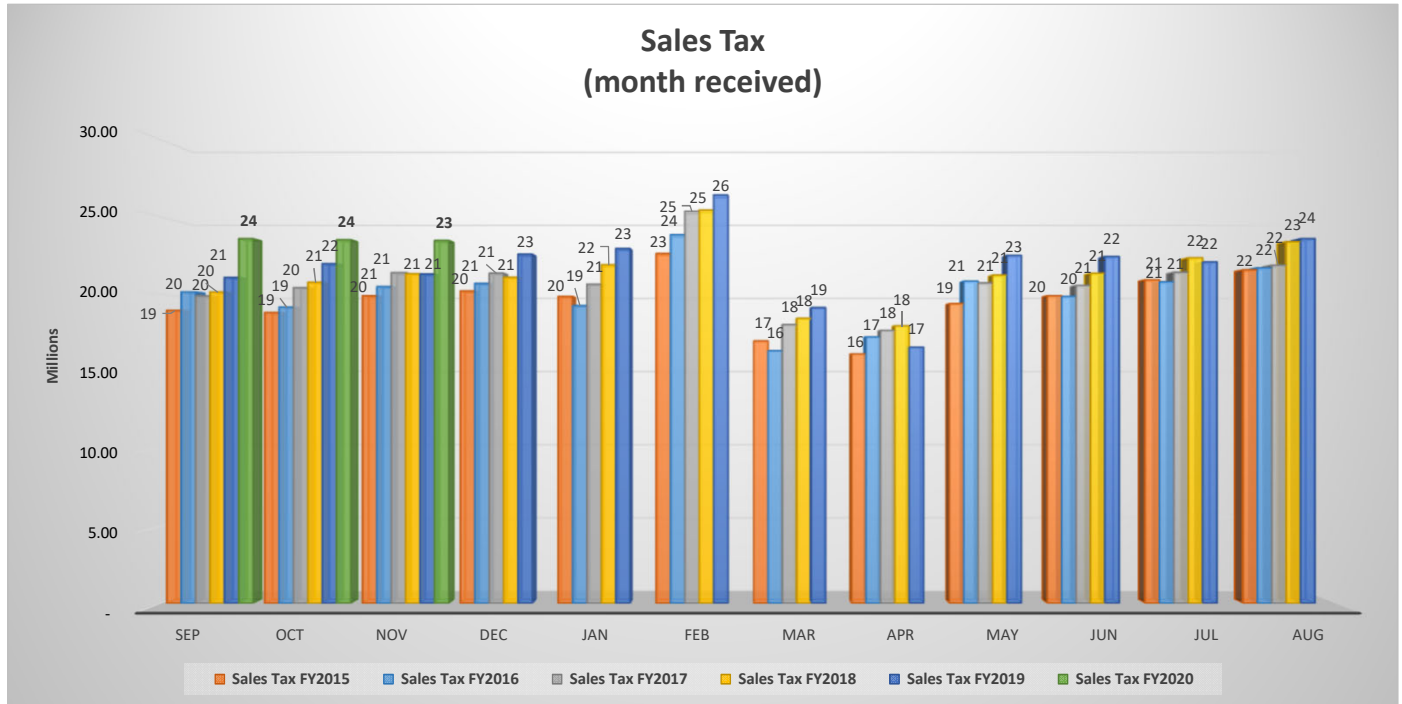
Regional Sales Tax		Annualized				
Transaction Months	2	Received	Revenue based	FY2020	Annualized - Actual	
		To Date	on YTD Receipts	Budget	To Budget	
City of Alexandria		\$ 3,035,648	\$ 18,213,886	\$ 16,379,177	\$ 1,834,709	
Arlington County		4,732,046	28,392,277	25,943,302	2,448,975	
City of Fairfax		1,268,787	7,612,725	7,506,931	105,794	
Fairfax County		19,816,134	118,896,802	114,583,396	4,313,406	
City of Falls Church		561,479	3,368,872	2,777,700	591,172	
Loudoun County		9,356,549	56,139,292	52,470,000	3,669,292	
City of Manassas		1,071,316	6,427,899	5,202,000	1,225,899	
City of Manassas Park		273,180	1,639,083	1,469,727	169,356	
Prince William County		6,981,599	41,889,596	39,514,160	2,375,436	
Total Sales Tax Revenue		\$47,096,738	\$ 282,580,431	\$ 265,846,393	\$ 16,734,038	6.3%

# Attachment B

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

Based on: Revenue Data Through October 2019

Jurisdiction	Vehicle License- Registration Fee	Regional Sales Tax		NVTA Fund Interest	Cumulative Total	30% Funds	9/30/2019 Accrued Interest (1)	9/30/2019 Prior Distributions	Current Month Distribution	Total Funds Transferred
							(+)			
City of Alexandria	\$ -	\$ 3,035,647.70	\$ -	\$ -	\$ 3,035,647.70	\$ 910,694.31	\$ 229.26	\$455,664.35	\$ 455,259.22	\$ 910,923.57
Arlington County	\$ -	\$ 4,732,046.16	\$ -	\$ -	\$ 4,732,046.16	\$ 1,419,613.85	\$ 382.10		\$ 1,419,995.95	
City of Fairfax	\$ -	\$ 1,268,787.42	\$ -	\$ -	\$ 1,268,787.42	\$ 380,636.23	\$ 114.63		\$ 380,750.86	
Fairfax County	\$ -	\$19,816,133.61	\$ -	\$ -	\$19,816,133.61	\$ 5,944,840.08	\$ 1,604.84	\$2,984,237.62	\$ 2,962,207.30	\$ 5,946,444.92
City of Falls Church	\$ -	\$ 561,478.70	\$ -	\$ -	\$ 561,478.70	\$ 168,443.61	\$ 38.21	\$86,315.59	\$ 82,166.23	\$ 168,481.82
Loudoun County	\$ -	\$ 9,356,548.63	\$ -	\$ -	\$ 9,356,548.63	\$ 2,806,964.59	\$ 764.20	\$1,380,247.99	\$ 1,427,480.80	\$ 2,807,728.79
City of Manassas	\$ -	\$ 1,071,316.42	\$ -	\$ -	\$ 1,071,316.42	\$ 321,394.93	\$ 76.42	\$165,949.64	\$ 155,521.71	\$ 321,471.35
City of Manassas Park	\$ -	\$ 273,180.45	\$ -	\$ -	\$ 273,180.45	\$ 81,954.14	\$ 38.21	\$40,318.53	\$ 41,673.82	\$81,992.35
Prince William County	\$ -	\$ 6,981,599.40	\$ -	\$ -	\$ 6,981,599.40	\$ 2,094,479.82	\$ 573.15	\$1,046,365.59	\$ 1,048,687.38	\$ 2,095,052.97
<b>Total Revenue</b>	<b>\$ 428,773.50</b>	<b>\$47,096,738.49</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$47,525,511.99</b>	<b>\$14,257,653.60</b>	<b>\$ 3,821.02</b>	<b>\$6,159,099.31</b>	<b>\$ 8,102,375.32</b>	<b>\$ 12,332,095.77</b>
	Interest earned through 9/30/2019									



# ATTACHMENT D

NVTA 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	\$20,929,358	46,015	0.98	\$20,478,439	-323,543			\$20,154,895	
	Oct-2017	\$20,786,302	\$20,976,003	46,645	0.99	\$20,744,601	41,702			\$40,941,198	
	Nov-2017	\$21,343,035	\$21,022,842	46,838	1.01	\$21,329,914	13,121			\$62,284,233	
	Dec-2017	\$21,115,955	\$21,062,414	39,572	1.03	\$21,614,762	-498,808			\$83,400,188	
	Jan-2018	\$21,915,159	\$21,110,539	48,125	1.01	\$21,336,444	578,714			\$105,315,346	
	Feb-2018	\$25,453,243	\$21,158,197	47,658	1.20	\$25,490,890	-37,647			\$130,768,589	
	Mar-2018	\$18,454,178	\$21,210,882	52,684	0.86	\$18,166,074	288,104			\$149,222,767	
	Apr-2018	\$17,961,788	\$21,272,100	61,219	0.82	\$17,491,997	469,790			\$167,184,555	
	May-2018	\$21,248,451	\$21,331,946	59,846	1.00	\$21,340,319	-91,868			\$188,433,006	
	Jun-2018	\$21,365,954	\$21,393,953	62,007	0.99	\$21,222,512	143,441			\$209,798,960	
	Jul-2018	\$22,367,630	\$21,458,019	64,065	1.04	\$22,224,964	142,666			\$232,166,590	
<b>FY18</b>	Aug-2018	\$23,408,269	\$21,527,724	69,706	1.07	\$23,004,812	403,457	<b>\$254,445,729</b>	<b>\$253,421,494</b>	<b>\$255,574,859</b>	
	Sep-2018	\$21,094,228	\$21,596,928	69,203	0.98	\$21,127,127	-32,899			\$21,094,228	
	Oct-2018	\$21,988,381	\$21,674,602	77,675	0.99	\$21,427,759	560,622			\$43,082,609	
	Nov-2018	\$21,319,899	\$21,741,226	66,623	1.01	\$22,070,206	-750,308			\$64,402,508	
	Dec-2018	\$22,602,475	\$21,811,206	69,980	1.03	\$22,372,028	230,447			\$87,004,983	
	Jan-2019	\$22,970,789	\$21,893,697	82,491	1.01	\$22,124,303	846,486			\$109,975,772	
	Feb-2019	\$26,427,801	\$21,975,593	81,896	1.20	\$26,475,802	-48,001			\$136,403,572	
	Mar-2019	\$19,145,454	\$22,061,847	86,254	0.86	\$18,895,629	249,825			\$155,549,026	
	Apr-2019	\$16,589,175	\$22,118,482	56,634	0.82	\$18,219,641	-1,630,466			\$172,138,201	
	May-2019	\$22,525,822	\$22,180,247	61,765	1.00	\$22,182,392	343,430			\$194,664,024	
	Jun-2019	\$22,453,420	\$22,247,847	67,601	0.99	\$22,066,003	387,417			\$217,117,444	
	Jul-2019	\$22,103,784	\$22,300,856	53,008	1.04	\$23,115,257	-1,011,473			\$239,221,228	
<b>FY19</b>	Aug-2019	\$23,605,507	\$22,349,832	48,976	1.07	\$23,893,896	-288,389	<b>\$263,970,043</b>	<b>\$258,926,224*</b>	<b>\$262,826,735</b>	
	Sep-2019	\$23,603,918	\$22,424,670	74,838	0.98	\$21,911,055	1,692,863			\$23,603,918	
	Oct-2019	\$23,492,821	\$22,518,257	93,588	0.99	\$22,251,966	1,240,854			\$47,096,738	
	Nov-2019					\$22,942,338					
	Dec-2019					\$23,292,833					
	Jan-2020					\$23,052,334					
	Feb-2020					\$27,579,857					
	Mar-2020					\$19,691,208					
	Apr-2020					\$18,986,068					
	May-2020					\$23,180,975					
	Jun-2020					\$23,082,839					
	Jul-2020					\$24,197,812					
<b>FY20</b>	Aug-2020	<b>*Current Fiscal Year Projection</b>					\$25,069,967		<b>\$275,239,253</b>	<b>\$265,846,393*</b>	

## NVTA Sales Tax Revenue Forecast 2014-2019: Model Observations

### Winters' Exponential Smoothing Forecast

#### Forecasting Constants (Optimized)

Level (Alpha)	0.015
Trend (Beta)	1.000
Season (Gamma)	0.000

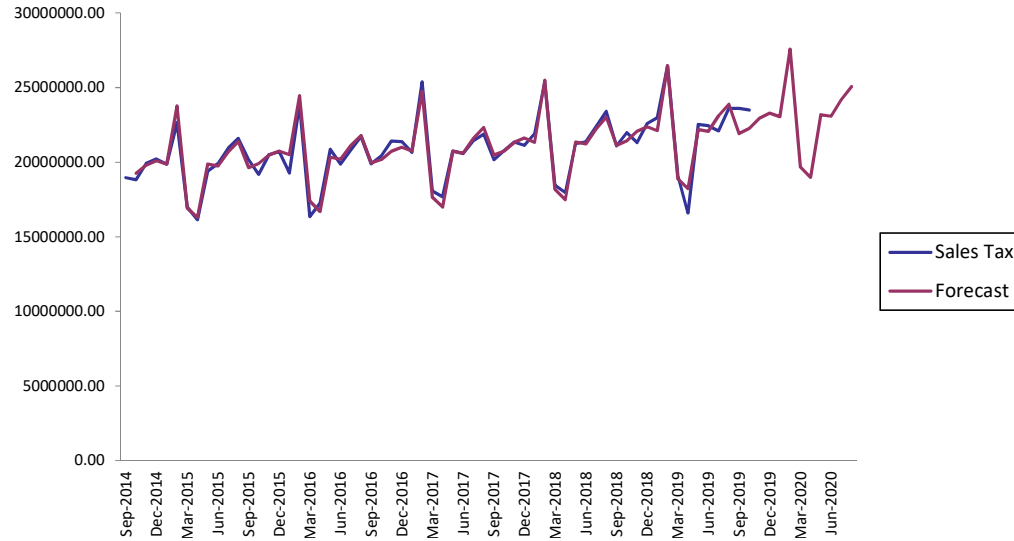
#### Winters' Exponential

Mean Abs Err	\$413,151.90
Root Mean Sq Err	\$567,906.18
Mean Abs Per% Err	2.02%

### 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

