MEMORANDUM OF UNDERSTANDING
BETWEEN THE ELECTED OFFICIALS TRANSPORTATION COMMITTEE (EOTC) AND THE ROARING FORK TRANSPORTATION AUTHORITY (RFTA) FOR NO-FARE TRANSIT SERVICE BETWEEN THE BRUSH CREEK PARK AND RIDE, CITY OF ASPEN, TOWN OF SNOWMASS VILLAGE, AND WOODY CREEK

THIS MEMORANDUM OF UNDERSTANDING ("MOU") is made and entered into as of this ___ day of _____, 2021, by and among the CITY OF ASPEN, Colorado, a home-rule municipal corporation (the "City"), THE TOWN OF SNOWMASS VILLAGE, Colorado, a home-rule municipal corporation (the "Town"), the BOARD OF COUNTY COMMISSIONERS OF THE COUNTY OF PITKIN, Colorado, a body corporate and politic (the "County"), and the Roaring Fork Transportation Authority ("RFTA").

RECITALS

1. On September 14th, 1993 the City, Town and County entered into an Intergovernmental Agreement establishing a committee made up of the elected officials from the City, the Town, and the County that has become known as the Elected Officials Transportation Committee (the "EOTC").

2. On May 3rd, 2021 the City, Town and County entered into an updated Intergovernmental Agreement further defining the EOTC.

3. In 1993 the parties adopted Joint Resolution No. 61 adopting a Comprehensive Valley Transportation Plan (the "Plan") establishing an initial framework for a comprehensive mass transportation strategy for the Roaring Fork Valley.

4. On July 16, 2020 the EOTC approved by separate resolutions an updated Plan that is to be updated from time to time.

5. On 1993 the parties adopted Joint Resolution No. 62 which adopted specific elements to be funded from the proceeds of transportation revenue bonds.

6. On November 2, 1993 the County electorate approved a County-wide one-half (1/2) cent sales tax and one-half (1/2) cent use tax (collectively, the "one-half cent sales and use tax") to fund the Plan, as amended, and other elements for the purpose of increasing and improving the public mass transportation system within the Roaring Fork Valley.

7. On September 12, 2000, the City, the Town, the County and certain other municipalities and counties in the Roaring Fork Valley entered into the Roaring Fork Transportation Authority Intergovernmental Agreement (the "Authority IGA"), forming the Roaring Fork Transportation Authority ("RFTA");

8. The Authority IGA furthered the goals set forth in the 1993 IGA and Joint Resolutions 61 and 62, but also amended the uses and distribution of the revenues of the one-half

cent sales and use tax and of the one cent mass transportation sales tax (collectively, the “one cent sales”) approved by County voters at the County-wide election on May 3, 1983, (together with the one-half cent sales and use tax, the “sales and use taxes”).

9. In connection with execution of the Authority IGA and the formation of the Authority, the City, the Town and the County adopted joint Resolution No. 1, Series of 2000, which established a funding commitment to the Authority from the one-half cent sales and use tax.

10. To effectuate such funding commitment, the City, the Town and the County entered into the Intergovernmental Agreement – Transportation Sales Tax Distribution dated as of April 25, 2001 (the “Distribution IGA”), which specified the distribution of (a) the one-half cent sales and use tax between the County and the Authority, and (b) the one cent sales tax among the City, the Town and the Authority.

11. As of the date of the Distribution IGA, there were outstanding certain County revenue bonds secured by the County’s share of the revenues of the one-cent sales and use tax issued that were issued pursuant to the County’s Resolution No. 92-392 and certain subsequent County resolutions supplemental thereto (collectively, the “Bond Resolution”), with voter-approved authority to issue additional such bonds (collectively with such then-outstanding bonds, and together with any bonds or other debt issued thereafter or hereafter that are payable from or secured in whole or in part by the one cent sales tax, the one-half cent sales and use tax, or any portion of either such tax, the “Sales and Use Tax Bonds”).

12. Accordingly, Section 4 of the Distribution IGA contains certain protections with respect to the sales and uses taxes for the holders of any such Sales and Use Tax Bonds, and additionally contains certain protections for the City, the Town and the Authority with respect thereto.

13. At a County-wide election held on November 2, 2004, the voters of the County approved a multiple fiscal year financial obligation of the County to contribute a portion of the one-half cent sales and use tax to the Authority (the “2004 Ballot Issue”) in connection with the approval by the members of the Authority other than the County, the City and the Town of separate sales and uses taxes in their respective jurisdictions to provide funding to the Authority.

14. Substantial structural changes occurred in 2019 by Colorado HB19-1240 which affect the revenue projections for RFTA and EOTC.

15. HB19-1240 changed Colorado’s administration of the State’s sales tax by taxing Ecommerce sales and shifting the nexus of taxation such that products delivered into Pitkin County are now subject to the County’s sales tax.

16. The increased scope of the sales tax reduces use tax revenues from construction materials as products may not be double taxed from both sales and use tax.

17. RFTA and EOTC share the ½ cent Pitkin County transportation sales tax whereby RFTA's share is 81.04% with the balance of 18.96% going to EOTC with the sharp increase in sales taxes benefiting both parties.

18. The EOTC retains 100% of the use tax that is declining sharply after passage of HB 19-1240 thereby negatively affecting the EOTC budget starting in 2020-2022 as the declines in the use tax exceed the growth in EOTC's share of the sales tax.

19. In 2010, in order to progress the Plan and increase transit ridership the EOTC with agreement from RFTA elected to make transit fares free to the rider between the Brush Creek Park and Ride, the Town of Snowmass Village, the City of Aspen, and Woody Creek ("No-Fare Service").

20. In 2010, the EOTC and RFTA agreed to set the No-Fare Service subsidy at 36.7% of the actual cost of the service two years prior to the year being budgeted.

21. Since 2010 the EOTC has budgeted and covered the cost for the No-Fare Service.

22. The EOTC desires to transfer the cost of the No-Fare Service from the EOTC to RFTA in order to move this cost from the EOTC where revenues are declining to RFTA where revenues are increasing due to the effects of HB19-1240.

23. RFTA hired consulting firm PFM Group Consulting LLC who produced an analysis of the expected financial impacts from HB19-1240 on RFTA and the EOTC relative to the cost of the No-Fare Service, dated September 3, 2021.

24. The PFM Group Consulting LLC analysis showed that RFTA sales tax revenue from the Pitkin County 0.5% transit sales tax would increase sufficiently to cover the cost of the No-Fare Service should it be assumed by RFTA.

25. The PFM Group Consulting LLC analysis showed that the cost of the No-Fare Service is roughly equivalent to the expected reduction in revenues to the EOTC as a result of HB19-1240.

26. The purpose of this MOU is to document the events and justification for the transfer of the No-Fare Service from the EOTC to RFTA in order to mitigate the financial impacts from HB 19-1240.

27. It is not the desire or intention of the parties to modify or amend the distribution described above of the sales and uses taxes or any portion thereof, or to modify, amend or impair any of the protections with respect to the sales and use taxes currently in place in the documents described above for the benefit of the holders of the Sales and Use Tax Bonds, the City, the Town or the Authority.

In consideration of the recitals set forth above and as a non-binding Memorandum of Understanding between them, the parties state as follows:

A. The Recitals outline the events leading to the transfer of the No-Fare Service from the EOTC to RFTA in order to mitigate the financial impacts from HB 19-1240 A compendium of documents titled "COMPENDIUM OF EOTC FUNDING DOCUMENTS" is hereby incorporated herein for historical reference.

B. RFTA has assumed all costs associate with No-Fare Service between the Brush Creek Park and Ride, the Town of Snowmass Village, the City of Aspen, and on the Woody Creek route starting on January 1, 2022 up to and until such fare structure is amended by the RFTA Board, in the Board's discretion, after a noticed public hearing.

C. It is RFTA's current intention that no fares will be charged to the rider / passenger on RFTA operated transit service between the Brush Creek Park and Ride, the Town of Snowmass Village, and the City of Aspen, or on the Woody Creek transit route.

D. It is RFTA's current intent to maintain aggregate seasonal service levels between Brush Creek Park and Ride, the Town of Snowmass Village, the City of Aspen, and the Woody Creek transit route at or exceeding those in effect during service year 2021.

E. Transit service for special events (e.g. X-Games) and other RFTA transit routes not servicing both an origin and destination between the Brush Creek Park and Ride, the Town of Snowmass Village, and the City of Aspen, or on the Woody Creek route are not intended to be subject to this MOU.

F. Although this MOU does not have the effect of law and is non-binding, all parties recognize that it is in the best interest of all parties to strive for consensus on any modifications to the arrangements set forth in this MOU.

G. This MOU defines and clarifies the understanding between the EOTC and RFTA to transfer the cost of the No-Fare Service from the EOTC to RFTA intended to take effect on January 1, 2022. Notwithstanding anything to the contrary contained in this MOU, any supporting documents with respect thereto and hereto, or any amendments thereof or hereof: (a) nothing contained in this MOU, or any such supporting documents or amendments is intended to modify or amend, and the same shall not modify or amend, the distribution of the sales and uses taxes set forth in the Distribution IGA and the 2004 Ballot Issue; and (b) nothing contained in this MOU, or any such supporting documents or amendments is intended to modify, amend or impair, and the same shall not modify, amend or impair, any of the protections granted by the 1993 IGA, Joint Resolutions 61 and 62, the Bond Resolution, the Distribution IGA, the 2004 Ballot Issue or any of the other agreements or other documents described in the recitals hereto to or for the benefit of (i) the holders of any Sales and Use Tax Bonds, so long as any Sales and Use Tax Bonds remain outstanding, or (ii) the City, the Town and the Authority.

H. This MOU is not intended to create any right in or for the public, or any member of the public, including any contractor, supplier or any other third party, or to authorize anyone not a party to this MOU to maintain a suit to enforce or take advantage of its terms. The duties, obligations and responsibilities of the parties with respect to third parties shall remain as imposed by law.

I. This MOU constitutes the entire understanding between the parties and all other promises and agreements relating to the subject of this MOU, whether oral or written, are merged herein.

J. Any notice required or permitted under this MOU should be in writing and should be provided by electronic delivery to the e-mail addresses set forth below *and* by one of the following methods 1) hand-delivery or 2) registered or certified mail, postage pre-paid to the mailing addresses set forth below. Each party by notice sent under this paragraph may change the address to which future notices should be sent. Electronic delivery of notices shall be considered delivered upon receipt of confirmation of delivery on the part of the sender. Nothing contained herein shall be construed to preclude personal service of any notice in the manner prescribed for personal service of a summons or other legal process.

To: Elected Officials Transportation Committee (EOTC):

Pitkin County Administration
c/o David Pesnichak, Regional Transportation Administrator
530 E. Main Street, Suite 302
Aspen, CO 81611
david.pesnichak@pitkincounty.com

To: Roaring Fork Transportation Authority:

2307 Wulfsohn Road
Attn: Dan Blankenship, Chief Executive Officer
Glenwood Springs, CO 81601
dblankenship@rfta.com

IN WITNESS WHEREOF, the parties hereto have executed this Memorandum of Understanding on the day and year first above written.

Elected Officials Transportation Committee (EOTC) - Designee:

By: _____

Roaring Fork Transportation Authority (RFTA) - Designee:

By: _____

ANALYSIS OF THE POTENTIAL FOR THE TRANSFER OF NO-FARE SERVICE FROM EOTC TO RFTA

ROARING FORK TRANSPORTATION AUTHORITY

Prepared on September 3, 2021

PFM Group Consulting LLC
Hank Fishkind, Ph.D., Director
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Executive Summary

- The Roaring Fork Transportation Authority ("RFTA") retained PFM to analyze the potential to transfer the funding of no-fare service from the Elected Officials Transportation Committee ("EOTC") to RFTA.

- Using the 2-year lag methodology, RFTA estimates that the cost of the no-fare service covering Aspen, Snowmass, and Woody Creek to range from $814,000-to-$1.06 million between 2021 and 2025.

- Substantial structural changes have occurred since 2019 which affect the revenue projections for RFTA and EOTC. HB19-1240 changed Colorado's administration of the State's sales tax by taxing Ecommerce sales and shifting the nexus of taxation such that products delivered into Pitkin County are now subject to the County's sales tax.

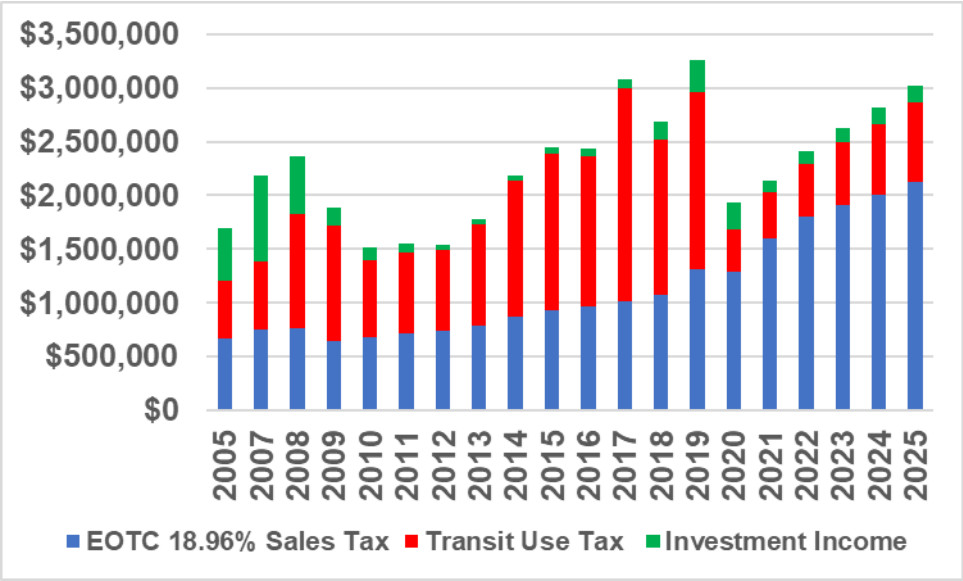
- However, the increased scope of the sales tax reduces use tax revenues from construction materials. If the materials pay the County's sales tax, they no longer pay use tax.

- RFTA and EOTC share the ½ cent Pitkin County transportation sales tax. RFTA's share is 81.04% with the balance of 18.96% going to EOTC. So, the sharp increase in sales taxes benefits both parties.

- However, EOTC retains 100% of the use tax which is declining sharply after passage of HB19-1240 and the consequent fall in use taxes on construction materials. Most of the negative impact on the EOTC budget occurs in 2020-2022 as the declines in the use tax exceed the growth in EOTC's share of the sales tax.

- However, over time the projected increases in EOTC's sales tax revenues are expected to offset declines in use tax revenues through 2025 as Figure E1 illustrates. Overall, EOTC's total revenues are projected to grow from less than $2 million in 2021 to over $3 million by 2025.

Figure E1. Annual Changes in EOTC Sales and Use Tax Receipts



- RFTA revenues increased substantially in 2019, because of a strong economy and HB19-1240. The 2020 Covid19 Recession caused RFTA revenues to dip. The forecast for 2021 and 2022 is for significant gains as the economy recovers and then for sales tax revenue gains to return to their more normal levels of about 5% per year.

- Based on these projections, can RFTA absorb the cost of the no-fare service? The answer is yes, as Table E1 shows.

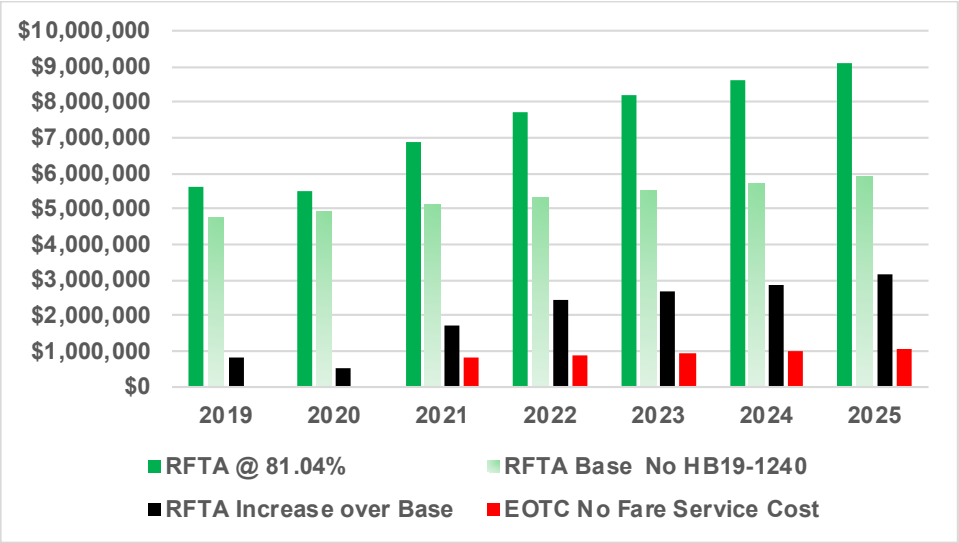
- The combination of HB19-1240 and a rebounding economy from 2021-23 will result in strong gains in the ½ cent transit sales tax pushing RFTA's 81.04% share up strongly as well. Some of this revenue growth would have occurred without the effect of HB19-1240. From 2005-2018 RFTA's share of the transit tax grew at a 4% annual rate as shown in the column labeled "RFTA Base No HB19-1240." The "RFTA Increase over Base" column shows the amount of additional sales tax revenues resulting from HB19-1240, which expanded the sales tax base and taxed products purchased elsewhere, but delivered into Pitkin.

Table E1. RFTA Revenue

Year	*Transit 1/2 Cent Sales Tax*	*RFTA @ 81.04%*	*RFTA Base No HB19-1240*	*RFTA Increase over Base*	*EOTC No Fare Service Cost*	*RFTA Increase Net of EOTC No Fare subsidy*
2018	$5,669,869	$4,594,862	$4,594,862	$0	NA	$0
2019	$6,929,287	$5,615,494	$4,764,269	$851,226	NA	$851,226
2020	$6,783,014	$5,496,955	$4,939,921	$557,033	NA	$557,033
2021	$8,449,872	$6,847,776	$5,122,050	$1,725,726	$814,000	$911,726
2022	$9,534,548	$7,726,798	$5,310,894	$2,415,904	$870,980	$1,544,924
2023	$10,078,385	$8,167,524	$5,506,700	$2,660,824	$931,949	$1,728,875
2024	$10,598,248	$8,588,820	$5,709,725	$2,879,096	$997,185	$1,881,911
2025	$11,203,532	$9,079,342	$5,920,235	$3,159,107	$1,060,000	$2,099,107
	=========	=========	=========	=========	=========	=========
Total	$69,246,756	$56,117,571	$41,868,655	$14,248,917	$4,674,114	$9,574,803

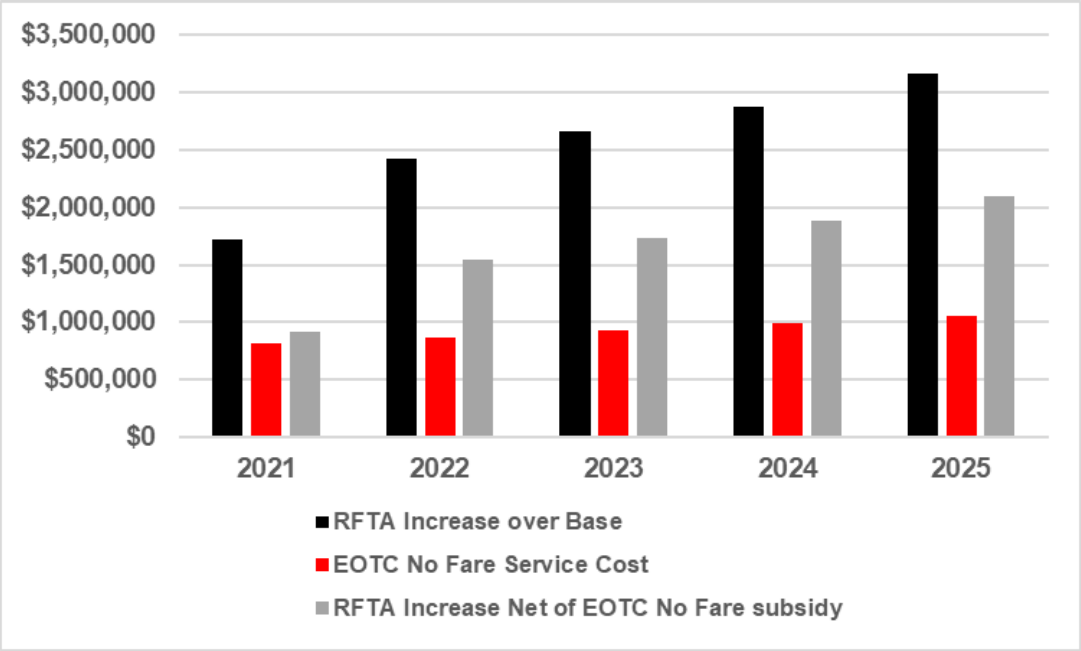
- RFTA staff estimates the EOTC No Fare Service Cost at $814,000 in 2021 rising to $1,060,000 by 2025. Since the RFTA Increase over Base revenues are projected to be more than the No Fare Service Costs, there would be more than enough revenue increase to support the subsidy through 2025. These considerations are illustrated in Figure E2.

Figure E1. RFTA Revenues and the No Fare Subsidy



- Figure E3 expands on the analysis of the no fare subsidy by showing the RFTA increase over the base, the no fare service cost, and the remaining RFTA revenue net of the subsidy. The RFTA revenue net of the subsidy is projected to range from $1.5 million in 2022 to over $2 million by 2025. Therefore, RFTA can absorb the no fare subsidy.

Figure E3. RFTA Revenue Increase Over Base, No Fare Subsidy and RFTA Increase Over Base net of No Fare Subsidy



- It is also useful to review the impact of HB19-1240 on EOTC's revenues compared to the estimated cost of the no fare service. Table E2 shows that through 2025 the no fare service has a total estimated cost of $3,860,114. HB19-1240 is projected to increase EOTC's sales tax revenues, but it will also decrease use tax revenues by even more with the net result of a reduction of $2,472,977 by 2025. It is important to note that the forecasted reduction of EOTC revenues is less than the estimated cost for the no fare service for each year through 2025. It is worth consideration for RFTA to absorb the cost of the no fare service up to the amount of forecasted reduction in EOTC revenues and then have the EOTC to contribute the difference.

Table E2. Net Impact on EOTC of HB19-1240 and Shifting the No Fare Service to RFTA

Year	*EOTC No Fare Cost*	*Net Impact of HB19-1240 on EOTC*	*Potential EOTC Contribution*
2022	$870,980	-$432,355	$438,625
2023	$931,949	-$569,416	$362,533
2024	$997,185	-$680,954	$316,231
2025	$1,060,000	-$790,252	$269,748
	=========	==========	==========
Total	$3,860,114	-$2,472,977	$1,387,137

- Finally, there are additional policy considerations concerning the no-fare service. The same forces that are boosting RFTA revenues will boost sales tax revenues for all the EOTC communities and for all RFTA participants that collect sales taxes. These increases should be factored into the policy decisions concerning the no-fare service.

ANALYSIS OF THE POTENTIAL FOR THE TRANSFER OF NO-FARE SERVICE FROM EOTC TO RFTA
ROARING FORK TRANSPORTATION AUTHORITY

1.0 Assignment and Overview

1.1 Assignment

The Roaring Fork Transportation Authority ("RFTA") retained PFM to analyze the potential to transfer the funding of no-fare service from the Elected Officials Transportation Committee ("EOTC") to RFTA. RFTA estimates that the cost of the no-fare service covering Aspen, Snowmass, and Woody Creek to range from $814,000-to-$1.06 million between 2021 and 2025.

1.2 Overview of Report

Section 2 reviews the revenue structure and history of the EOTC budget. The section begins with an overview of the EOTC and then describes its revenue structure. The historic performance of the EOTC budget is reviewed to provide the background for the projections.

Section 3 focuses on the econometric forecasting methodology used to project the EOTC budget. PFM developed two econometric forecasting formulae, one for sales tax revenues and the other for use tax revenues. The formulae were estimated using ordinary least squares regression. The regression procedures are discussed along with the economic forecasts from Moody's Analytics that are used for the independent variables in the forecasting equations.

Section 4 presents a summary of the economic outlook for the U.S. and Pitkin County. The discussion begins with an analysis of the structural changes occurring in the national and local economies and then provides the forecasts.

The forecasts and analyses in Section 4 are used to drive the EOTC revenue projections described in Section 5. Forecasts are provided separately for sales taxes and use taxes.

With the forecasts as foundations, Section 6 examines the potential to transfer responsibility for the non-fare service from the EOTC to RFTA. Additional policy considerations are also discussed.

2.0 Revenue Structure of EOTC

2.1 The EOTC

The EOTC was established in 1993 as an advisory committee for fixed route public transit within the Roaring Fork Valley. The EOTC members are elected officials from the City of Aspen, Town of Snowmass Village, and Pitkin County.

Colorado Revised Statute 29-2-103.5, enacted in 1990, gave counties the authority to levy sales and use taxes "for the purpose of financing, constructing, operating, or maintaining a mass transportation system within the county." In November 1993, Pitkin County voters approved a 0.5% County Transit Sales and Use Tax for the purpose of financing, constructing, operating, and managing a mass transportation system within the Roaring Fork Valley.

In conjunction with the countywide ballot measure, Pitkin County, the Town of Snowmass Village, and the City of Aspen adopted a 1993 Intergovernmental Agreement ("IGA"): (a) establishing the EOTC; (b) determining its structure; and (c) defining how the collected funds may be allocated. The EOTC allocates the countywide 0.5% sales tax and a 0.5% use tax funds in a manner that is consistent with State Statute, the 1993 ballot language, and the IGA.

2.2 Revenue Structure

Since 2005, the EOTC receives funding from three sources. First, the EOTC shares the 0.5% Pitkin County sales tax with RFTA. The EOTC's share is 18.96% with the balance of 81.04% going to RFTA. Second, the EOTC is allocated 100% of Pitkin County's 0.5% use tax. Third, the EOTC collects revenue from its investments and other miscellaneous sources.

2.3 Revenue History

Figure 1 presents the revenue history for the EOTC by component from 2005 through 2020. During this period, EOTC revenue has varied from $1,512,076 in 2010 to $3,257,373 in 2019. The annual variation in EOTC revenues is displayed in Figure 2.

Annual variations have ranged from $649,964 to -$1,323,494. In many years, revenues have changed by $1,000,000 on a base of less than $3,000,000. The variable nature of EOTC revenues from year-to-year have obvious implications for the forecast.

Figure 1. EOTC Revenue History by Component

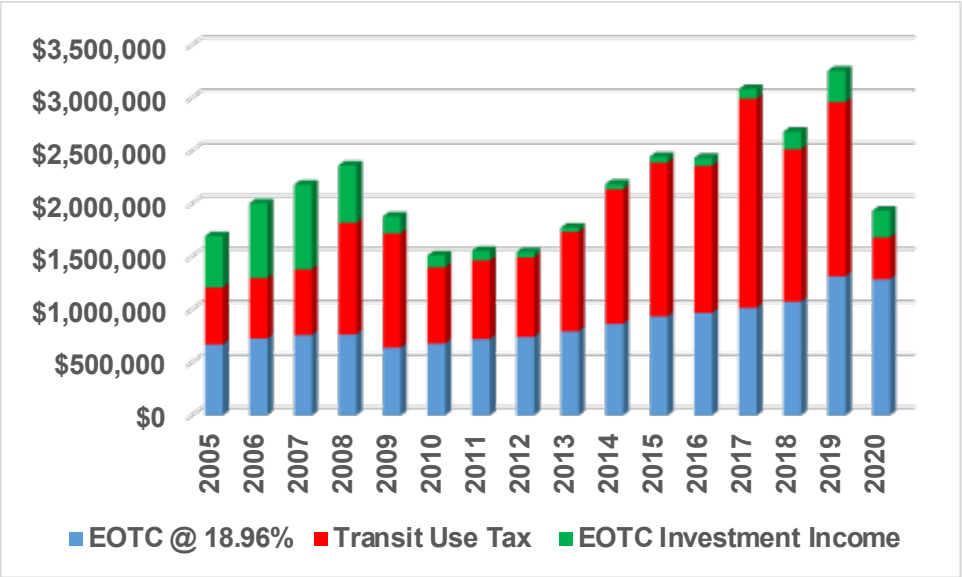
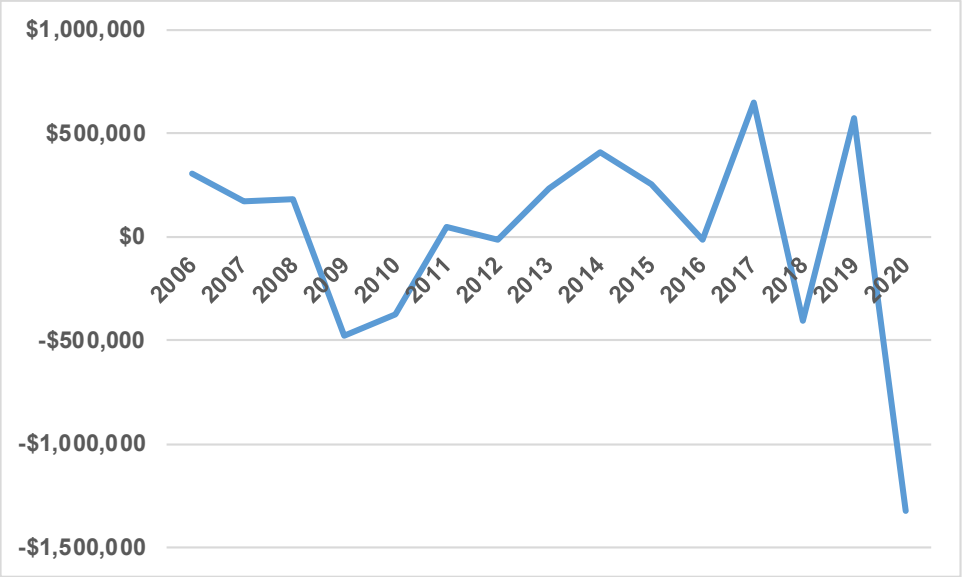


Figure 2. Annual Changes in EOTC Revenue



Much of the recent volatility in EOTC revenues results from the economic consequences of the Covid19 recession and changes in Colorado law governing the collection of sales taxes. HB19-1240 became effective June 1, 2019. The law allows the State to collect sales taxes on Ecommerce sales greatly increasing sales tax revenue.

However, it also decreased use tax revenues in 2020 with implications going forward. This is because of the structure of the County's use tax. Pitkin County imposes a 0.5% use tax on construction materials and motor vehicles. As Table 1 shows, construction use taxes plummeted in 2020 in large part because of HB19-1240, which changed the State's sales tax collection system. Monthly revenue in 2021 indicate that this trend is accelerating.

Table 1. Pitkin County Use Tax Collections

Year	*413000 - Construction Use Tax*	*413010 - Motor Vehicle Use Tax*	*Total*
2019	$1,332,173	$316,398	$1,648,572
2020	$50,939	$344,667	$395,606

The Pitkin County construction use tax applies to all projects within the county, including those inside municipal jurisdictions. The County collects a 0.5% use tax on construction and building materials used in the county on which no Pitkin County sales tax was collected. The expansion of the State's sales tax to include Ecommerce sales, along with the change in the nexus of the tax, as described below, results in sales taxes being applied to construction materials purchased outside Pitkin County and collected and provided to Pitkin County for materials delivered to a Pitkin County address.

Concerning the nexus, H.B.19-1240 substantially increases retailers' collection requirements for state-administered local taxes (statutory city, county, and special districts) by requiring a retailer with Colorado nexus to collect local taxes regardless of whether the retailer has store or physical location within the local jurisdiction. Until the passage of H.B.19-1240, a retailer (whether in-state or out-of-state) with physical presence in Colorado was not required to collect state-administered local sales taxes on sales shipped or delivered to a local jurisdiction for which it lacked a physical presence, and was further not required to collect local sales taxes at the retail store location for sales shipped or delivered to a different local jurisdiction. With the passage of H.B.19-1240, a retailer with Colorado nexus having more than $100,000 in Colorado sales, is now required to collect all state-administered local sales taxes based upon the shipping / delivery address regardless of whether the retailer has physical presence or a specified level of sales with the local jurisdiction.

As a result, construction materials purchased for use in Pitkin County and delivered to a Pitkin County address will pay the Pitkin County sales tax. This will then exempt these materials from the use tax.

3.0 Methodology to Forecast EOTC Revenue

3.1 Overview

Beginning in 2005, EOTC revenue comes from three sources: (a) 18.94% of the 0.5% Pitkin County sales tax; (b) 100% of the Transit Use Tax; and (c) 100% of investment and other miscellaneous income. Each component is projected separately since they have differing bases and factors that determine their trajectories. PFM developed a set of econometric forecast formulae estimated using ordinary least squares regression methods to project the EOTC revenue streams through 2025.

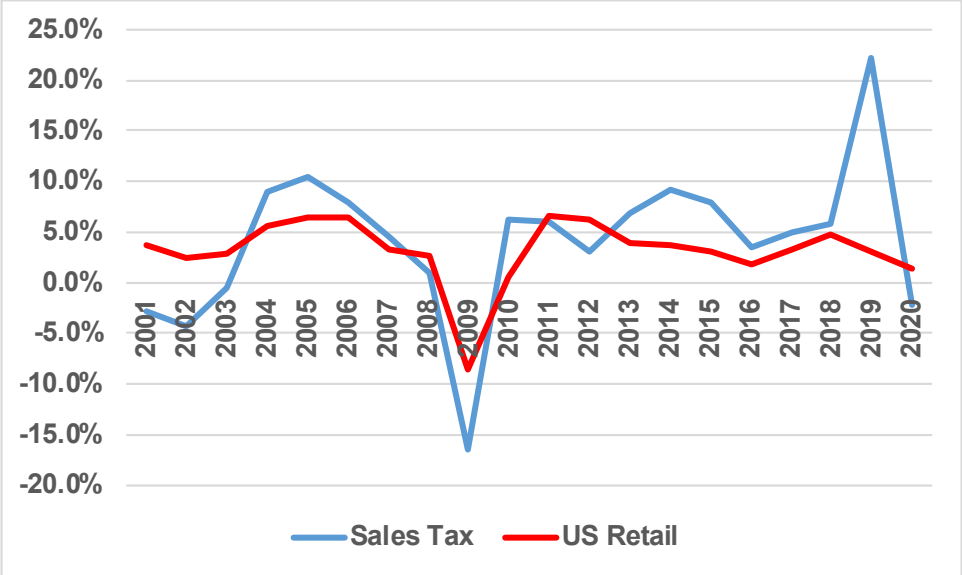
3.2 Economic Models

An econometric model is essentially an algebraic formula based on economic theory. The parameters or coefficients of the formula (i.e. the weights or amounts) are estimated using a statistical method called regression based on the economic data for the variable of interest (the dependent variable) and explanatory variables (independent variables). Stated differently, the goal of the exercise is to mathematically describe the relationship between the dependent variable and the independent variables.[1]

In this case, PFM hypothesized that the trajectory of Pitkin County's ½ cent sales tax can be explained by the trajectory of U.S. retail sales and changes to the Colorado sales tax law enacted in 2019. While we recognize that the composition of economic activity in Pitkin County is not an exact replicate of the U.S. economy, the two datasets move closely together (they are highly correlated). In fact, the growth rate of Pitkin County's ½ cent sales tax has a correlation of 0.8 with the growth in U.S. retail sales from 2001-2018. This means that 80% of the variation in growth the sales tax tracks the growth in U.S. retail sales as Figure 3 illustrates. The only substantial deviation between the trajectory of the growth in U.S. retail sales and the growth in Pitkin County's ½ cent sales tax came in 2019. This was the result of the change in Colorado law HB19-1240 that imposed sales taxes on Ecommerce sales in Colorado.

[1] Wooldridge (2013), pages 1-16.

Figure 3. Growth in Pitkin County's ½ Cent Sales Tax and U.S. Retail Sales



Turning to the use tax, PFM found that it was correlated with the growth in Colorado's gross state product ("CGSP"). The correlation between the growth in use tax collections and growth of CGSP was 0.47. Since the use tax is collected on sales of construction materials and motor vehicles, it is reasonable to model them based on the growth in Colorado's gross state product. An additional explanatory variable is added to account for the impact of HB19-1240, as discussed previously. Finally, PFM included an "Other" episodic explanatory variable to capture various one-time events pushing the use taxes up and down dramatically in certain years.

Finally, PFM modeled investment income as a function of the one- year prior amount of total EOTC revenue. From 2015 through 2020, investment income averaged 6% of the prior year total EOTC revenue in each year.

3.3 Regression Analysis

As discussed above, PFM specified three equations to quantify the relationships between the three EOTC revenue sources and a set of explanatory variables. The equations are set out in algebraic form below.

(1) Growth in ½ Cent Sales Tax_t = B1 + B2 * Growth in U.S. Retail $Sales_t$ + B3* HB19-1240

(2) Growth Use Tax_t = B1 + B2 * Growth Colorado GSP_{t-1} + B3 * HB19-1240 + B4 * Other Episodic Factors

(3) EOTC Investment $Income_t$ = 6% * EOTC Investment $Income_{t-1}$

B1, B2, B3 and B4 are coefficients whose values will be estimated using regression procedures. T is for time and T-1 is for one year lagged. PFM used the ordinary least squares ("OLS") regression method to estimate the coefficients for the equations. OLS estimates the coefficient values by minimizing the sum of the squared errors between the actual values and the fitted values to generate the best fitting linear equation. If the assumptions underlying OLS are met, then coefficients estimated using OLS are the best and most reliable coefficient estimates.

There are seven classical OLS assumptions, that if satisfied, assure the best coefficient estimates.[2]

(1) The equations are linear in the coefficients and the error term.
(2) The error term has a mean of zero.
(3) All the independent variables are uncorrelated with the error term.
(4) The errors are uncorrelated with each other (no autocorrelation).
(5) The error term has a constant variance (no heteroscedasticity).
(6) No multicollinearity.
(7) The error term is normally distributed.

The results of the OLS regressions are presented next, along with a discussion of their statistical properties.

3.4 Forecast Equations

Table 2 displays the regression results for the equation to explain the growth in Pitkin County's ½ cent sales tax. The equation provides a good fit to the data explaining 80% of the variation in the growth of the ½ cent sales tax as demonstrated by the Adjusted R Square statistic of 0.8. The equation is highly reliable as a whole, based on its F score of 34. Any F score over 4 is reliable. The coefficient estimates for the growth in U.S. retail sales and HB19-1240 are reliably estimated based on their low standard errors producing their high t-stats. A t-stat above 2 is one that is highly reliable. As the P-values show, the probabilities that the coefficients are zero instead of the values estimated by the OLS regression are essentially zero.

Figure 4 shows that the model provides an equation generating a very close fit to the actual trajectory of the growth in the ½ cent sales tax. The statistical properties of the equation satisfy the seven requirements of the OLS method. The equation is linear in form and the coefficients are linear in their effects, as shown in Figure 4. The error term, which is the difference between the fitted value and the actual value also called the residual, has a mean of zero.

[2] Frost (2019), pages 195-203.

Table 2. Regression Results for the Growth of the ½ Cent Sales Tax

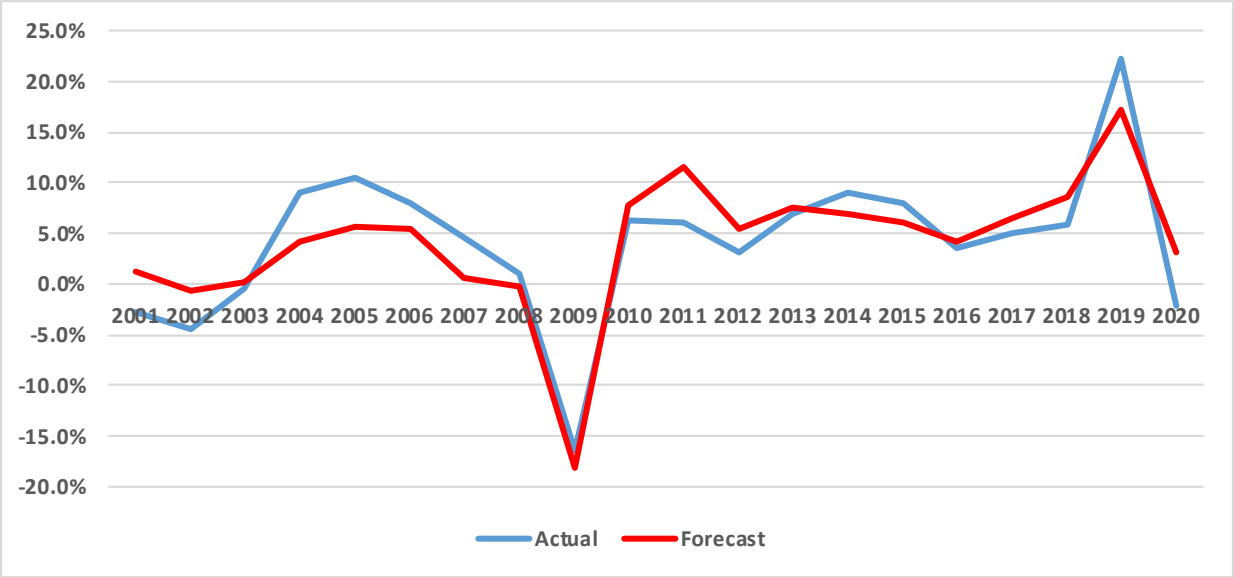
Regression Statistics	
Multiple R	0.90
R Square	0.80
Adjusted R Square	0.78
Standard Error	0.04
Observations	20.00

ANOVA

	df	*SS*	*MS*	*F*
Regression	2	0.09	0.04	34.66
Residual	17	0.02	0.00	
Total	19	0.11		

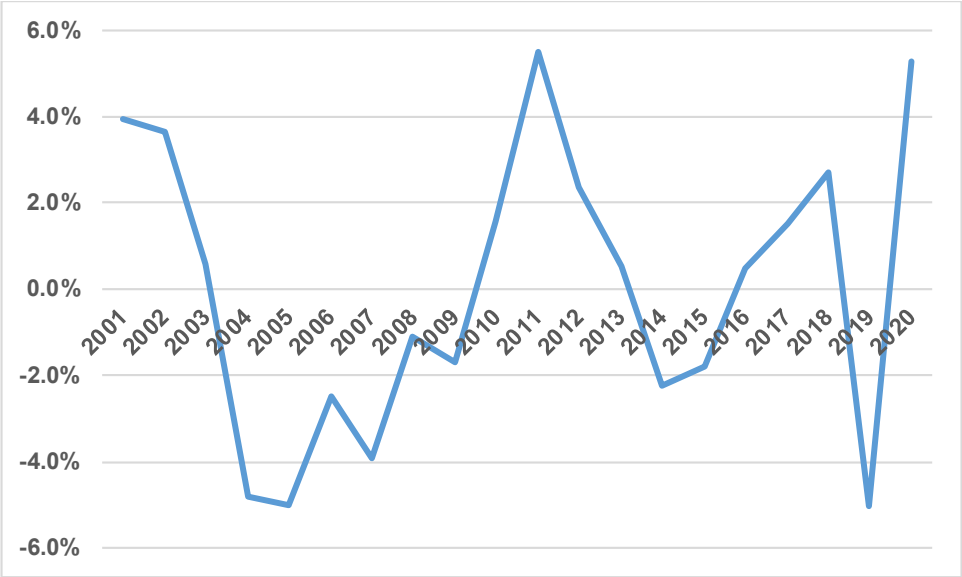
	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	0.01	0.01	0.93	0.364275
US Retail	1.59	0.25	6.35	7.31E-06
HB19-1240	0.11	0.02	5.67	2.79E-05

Figure 4. Comparison of Actual v. Forecast Growth in ½ Cent Sales Tax



The plot of the residuals shown in Figure 5 indicates that they are not independent over time. For example, each year from 2005-2008 and 2013-2016, the model underestimated the actual growth rate in the ½ cent sales tax. The effect is to compromise the precision of the coefficient estimates. However, in this case the effect is minor given the very high t-Stat values.

Figure 5. Plot of the Residuals



The scatter plot of the actual data compared to the residual values shown in Figure 6 demonstrates that the error term has a constant variance (no heteroscedasticity). If not, the scatter plot will show a tell tale cone shape where the residuals increase in one direction or another.

A check of the correlation between the explanatory variables shows that the correlation is low. Thus, there is no multicollinearity to worry about. Finally, the residuals exhibit a normal distribution.

Figure 6. Scatter Plot of the Actual Data and the Residuals

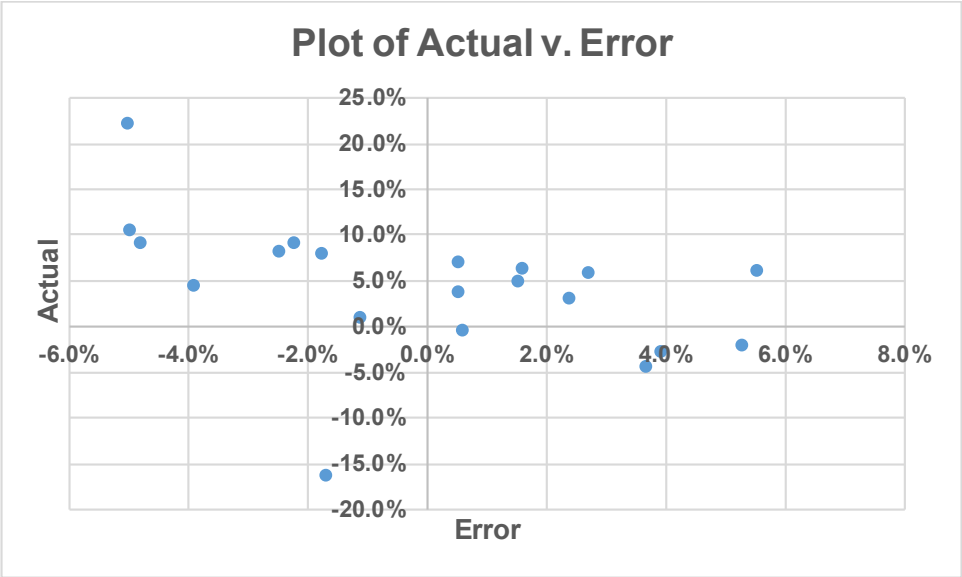


Table 3 shows the regression results for the equation for the growth in the Pitkin County use tax. The equation provides a very good fit to the data with its Adjusted R Square of 0.83. Figure 7 shows, the model tracks the actual variations in the use tax except for extreme years such as 2008 when use taxes jumped 70%, or in 2010 when they plunged 33%.

The F score of over 26 indicates that the overall model is highly reliable. The coefficient estimate for Colorado GDP has a t Stat of 2.08 making it reliable different from zero with a 96% level of confidence. The coefficient on HB19-1240 has a t Stat over 2.8 making it highly reliable with 99% confidence. The coefficient estimate for Other factors is also highly reliable with a t Stat of nearly 7.

The mean of the error terms is zero as required. The plot of the residuals in Figure 8 shows no sign of serial correlation with each error independent of the next. There is no heteroscedasticity either as Figure 9 shows. Multicollinearity is not an issue since the correlations among the independent variables is low. Finally, the residuals exhibit a normal distribution.

Table 3. Regression Results for the Growth in the Use Tax

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.91
R Square	0.83
Adjusted R Square	0.80
Standard Error	0.13
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	1.41	0.47	26.82	1.7648E-06
Residual	16	0.28	0.02		
Total	19	1.70			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-0.07	0.06	-1.17	0.26	-0.21
CO GDP-1	2.48	1.19	2.08	0.05	-0.04
HB19-1240	-0.43	0.15	-2.80	0.01	-0.76
Other	0.40	0.06	6.28	0.00	0.26

Figure 7. Comparison of Actual v. Forecast Growth in Use Tax

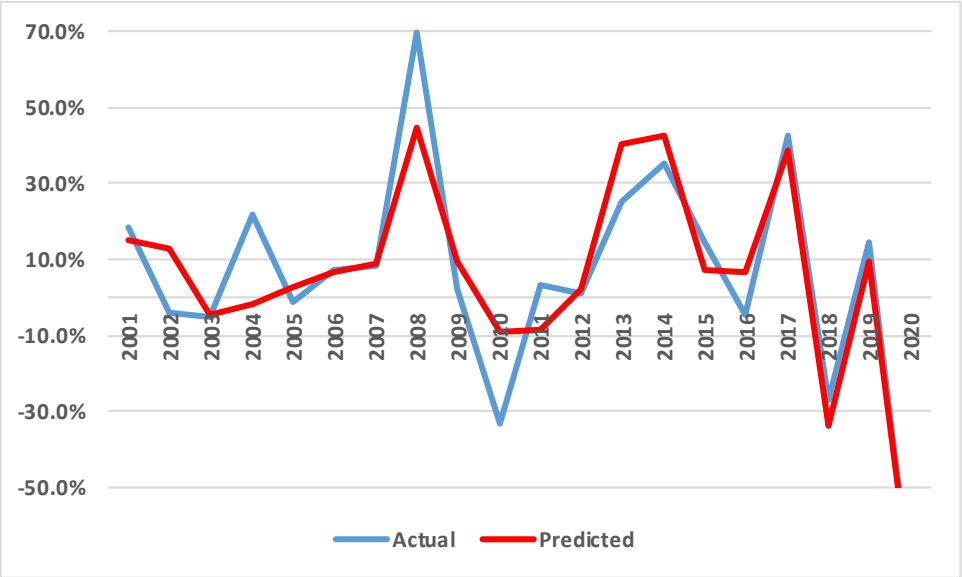


Figure 8. Plot of the Residuals

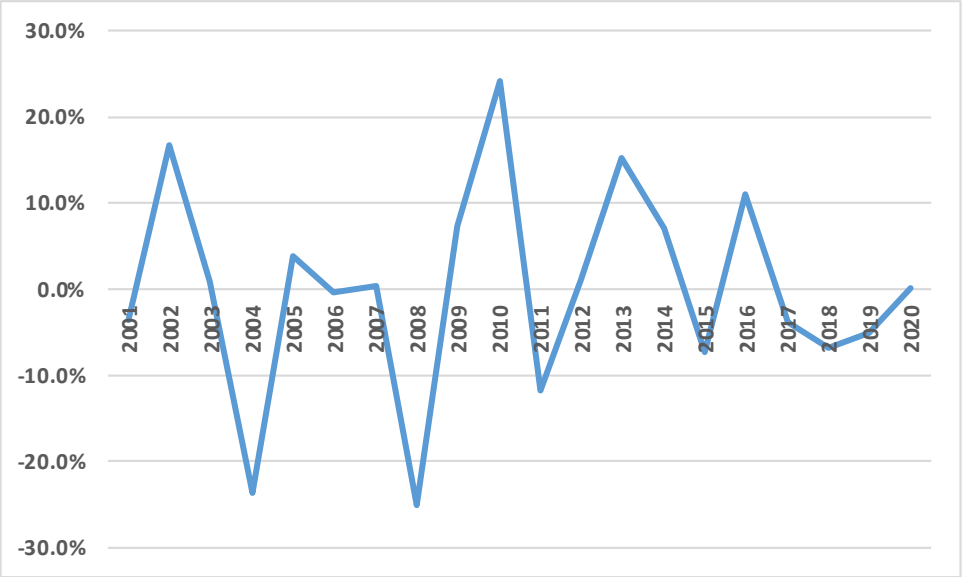
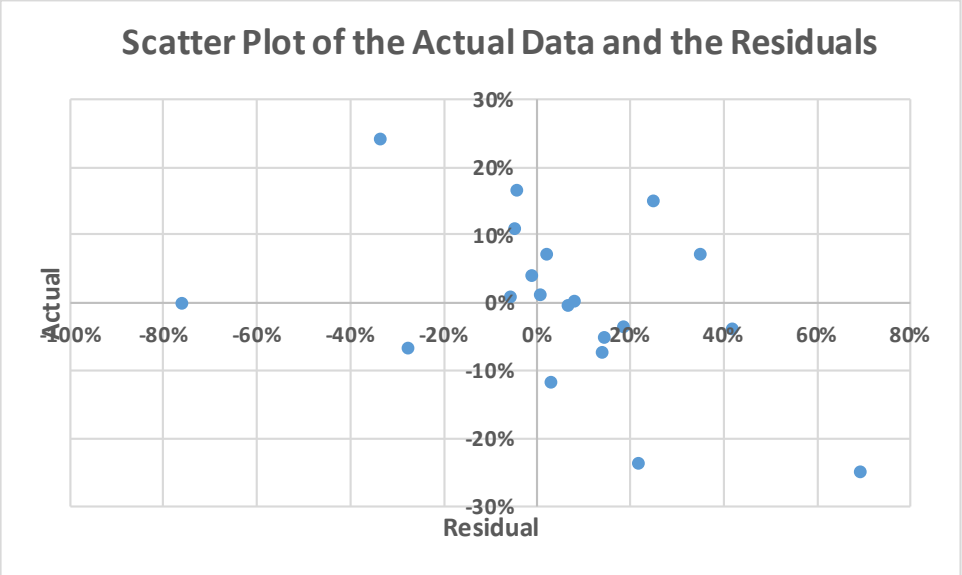


Figure 9. Scatter Plot of the Actual Data and the Residuals



4.0 Economic Outlook

4.1 Overview

It is beyond the scope and budget for this assignment to provide detailed economic forecasts for the U.S. and Pitkin County economies. However, summary projections are a necessary foundation for the EOTC revenue forecast. The sections below focus on the most important factors affecting the EOTC forecast.

4.2 Structural Changes

Prior to the Covid19 outbreak and recession, the U.S. economy was undergoing a set of structural changes. Globalization of supply chains and the expansion of international trade over the last 20 years has resulted in very low inflation, low interest rates, and virtually no growth in real wages for a substantial portion of U.S. households. Birth rates and the levels of net migration have caused U.S. population growth to slow to about 1%. Since the Great Recession in 2007-8, investment in plant and equipment has slowed sharply. All of this has slowed the long-term rate of U.S. growth to about 2% annually.

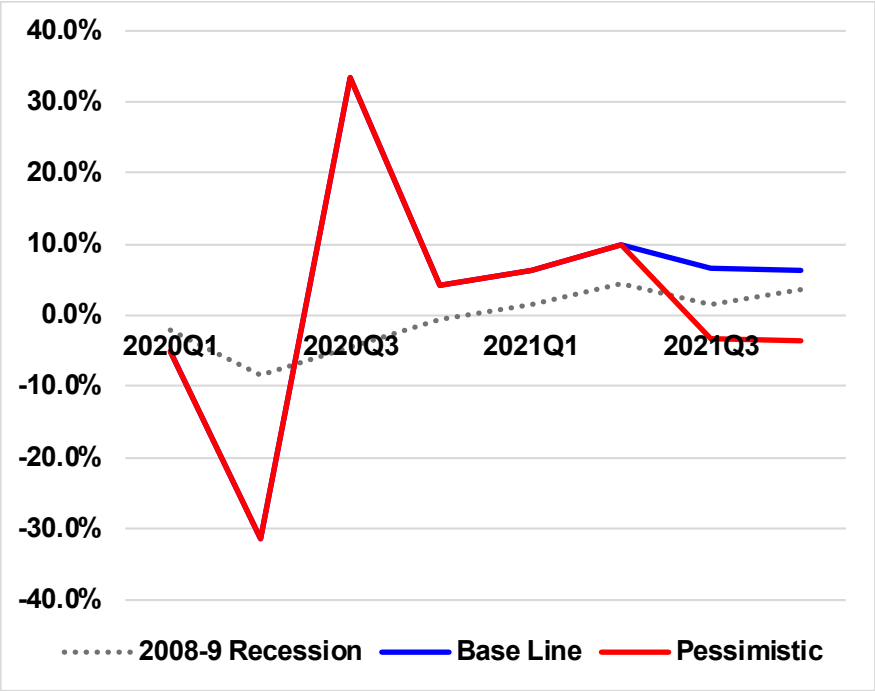
Without a major change in U.S. economic policies, there is no reason to believe that the outlook for growth or inflation will change significantly. The Trump tax cuts failed to boost U.S. investment spending or productivity. To date, the effect has been to exacerbate the growing inequality of wealth distribution. The potential impact of President Biden's infrastructure proposals is uncertain because of the political process and prospects for amendments and risk of passage. Regardless, the programs will have only small impact in the very near term.

What is certain is that the massive federal stimulus programs enacted to offset the impact of the Covid19 recession have triggered a strong rebound pushing GDP back above its prior pre-Pandemic level. The structural changes wrought by the Pandemic are unfolding. The Pandemic proved that work-from-home worked for many businesses and many employees. While this is certain to have major structural impacts on many industries and occupations as well as many locales, it will take a few more years for the process to reach equilibrium. All of these forces cloud the outlook adding more than the usual uncertainty for any forecast.

4.3 Macro Outlook

PFM uses the macroeconomic forecasts provided by Moody's Analytics. As Figure 9 shows, Moody's is projecting continuing strong economic growth over the next few years supported by the massive federal response to the Pandemic, and the expectation that the current surge of Covid19 caused by the Delta Variant, will peak in August and vaccination rates will improve providing a buffer against future viral surges.

Figure 9. Growth of Real GDP



The forecast equation for the growth in Pitkin County's ½ cent sales tax is driven by the projection for growth in U.S. retail sales. Moody's forecast is shown in Figure 10. Moody's has projected a 15% jump in retail sales this year followed by an 11% gain in 2022. Thereafter, gains in retail sales will settle back to their more normal pace of +/- 3% per year.

Figure 11 shows the projections for growth in Colorado's gross state product which is used to drive the forecast for Pitkin's use tax collections. Moody's expects growth of about 5% in 2021 with a surge in 2022 to 11%. Strong growth is projected through 2025 averaging about 5.5% per year.

Figure 10. Growth of U.S. Retail Sales

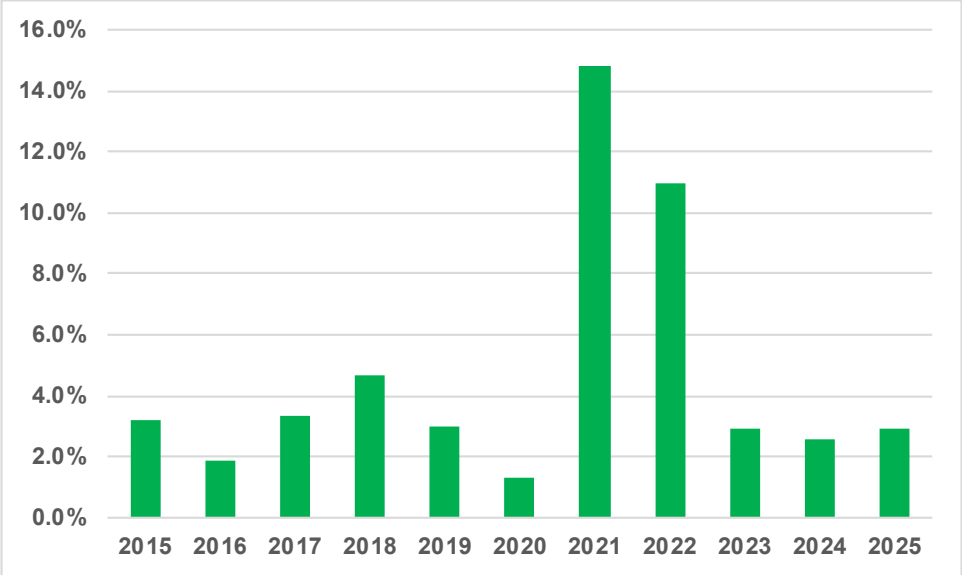
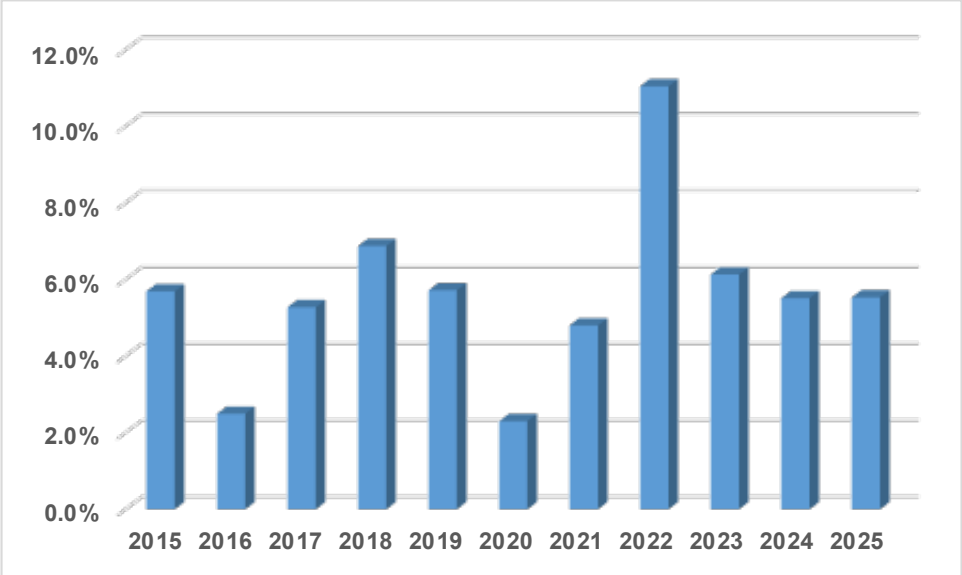


Figure 11. Growth in Colorado Gross State Product



5.0 Revenue Forecast and Analysis for EOTC

5.1 Revenue Forecast for EOTC

As noted above, the EOTC receives funding from three sources. First, the EOTC shares the 0.5% Pitkin County sales tax with RFTA. Since 2005, the EOTC's share is 18.96% with the balance of 81.04% going to RFTA. Second, the EOTC is allocated 100% of Pitkin County's 0.5% use tax. Third, the EOTC collects revenue from its investments and other miscellaneous sources.

Substantial structural changes have occurred since 2019 which affect the revenue projections for EOTC. HB19-1240 changed Colorado's administration of the State's sales tax by taxing Ecommerce sales and shifting the nexus of taxation such that products delivered into Pitkin County are now subject to the County's sales tax. However, the increased scope of the sales tax reduces use tax revenues from construction materials. If the materials pay sales tax, they no longer pay use tax. In addition, the Covid19 recession and recovery have had dramatic impacts on sales tax revenues.

The ½ cent transit sales tax soared $1.3 million higher in 2019. Then, revenues dropped $150,000 in 2020 pushed lower by the recession. Sales tax revenues are on track to rebound by $1.7 million this year.

The revenue forecast for EOTC was developed by using the forecast equations discussed in Section 3 in combination with the forecasts for the independent variables provided by Moody's shown in Section 4. Table 4 contains the history and projections for the EOTC revenues along with its components.

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Table 4. EOTC Revenues by Component History and Forecast

Year	*Transit ½ Cent Sales Tax*	*RFTA @ 81.04%*	*EOTC @ 18.96%*	*Transit Use Tax*	*EOTC Investment Income*	*EOTC Total*
2000	$3,173,527	$1,524,562	$1,648,965	$412,241	$229,483	$3,815,251
2001	$3,087,144	$1,483,064	$1,604,080	$489,096	$225,419	$2,318,595
2002	$2,952,182	$1,415,871	$1,536,311	$469,937	$273,872	$2,280,120
2003	$2,937,595	$1,411,221	$1,526,374	$444,861	$162,925	$2,134,160
2004	$3,203,296	$1,538,863	$1,664,433	$542,548	$196,227	$2,403,208
2005	$3,541,309	$2,869,877	$671,432	$537,039	$485,076	$1,693,547
2006	$3,825,453	$3,100,147	$725,306	$574,180	$705,319	$2,004,805
2007	$3,997,592	$3,239,649	$757,943	$622,008	$800,644	$2,180,595
2008	$4,034,722	$3,269,739	$764,983	$1,055,214	$543,017	$2,363,214
2009	$3,371,170	$2,731,996	$639,174	$1,079,909	$162,517	$1,881,600
2010	$3,580,664	$2,901,770	$678,894	$720,201	$112,981	$1,512,076
2011	$3,798,447	$3,078,261	$720,186	$743,775	$91,897	$1,555,858
2012	$3,913,565	$3,171,553	$742,012	$751,827	$51,181	$1,545,020
2013	$4,185,934	$3,392,281	$793,653	$940,434	$41,522	$1,775,609
2014	$4,567,135	$3,701,206	$865,929	$1,271,318	$50,288	$2,187,535
2015	$4,929,637	$3,994,978	$934,659	$1,454,532	$56,747	$2,445,938
2016	$5,106,873	$4,138,610	$968,263	$1,390,061	$75,190	$2,433,514
2017	$5,357,764	$4,341,932	$1,015,832	$1,978,646	$89,000	$3,083,478
2018	$5,669,869	$4,594,862	$1,075,007	$1,484,002	$166,211	$2,725,220
2019	$6,929,287	$5,615,494	$1,313,793	$1,648,572	$295,008	$3,257,373
2020	$6,783,014	$5,496,955	$1,286,059	$957,794	$252,213	$2,496,067
2021	$8,449,872	$6,847,776	$1,602,096	$431,576	$107,870	$2,141,542
2022	$9,534,548	$7,726,798	$1,807,750	$483,640	$119,453	$2,410,843
2023	$10,078,385	$8,167,524	$1,910,862	$577,870	$134,474	$2,623,206
2024	$10,598,248	$8,588,820	$2,009,428	$656,703	$146,320	$2,812,451
2025	$11,203,532	$9,079,342	$2,124,190	$741,453	$156,876	$3,022,518

After falling sharply in 2020, EOTC revenues are expected to decline again modestly in 2021. Thereafter, EOTC revenues will grow slowly fueled by gains in both sales and use taxes. Sales taxes will return to their normal trajectory after the big surges in 2021 and 2022. After falling sharply in 2020 and 2021 because of the impact of HB19-1240, use taxes stabilize and begin growing with gains in use taxes from autos. Figure 12 displays the forecast for EOTC's revenue.

Figure 12. EOTC Revenues

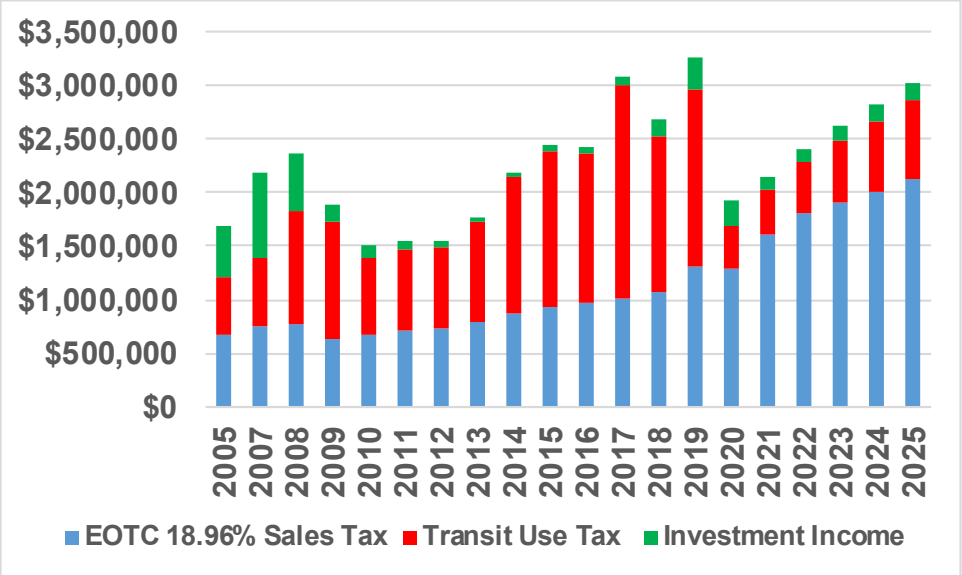


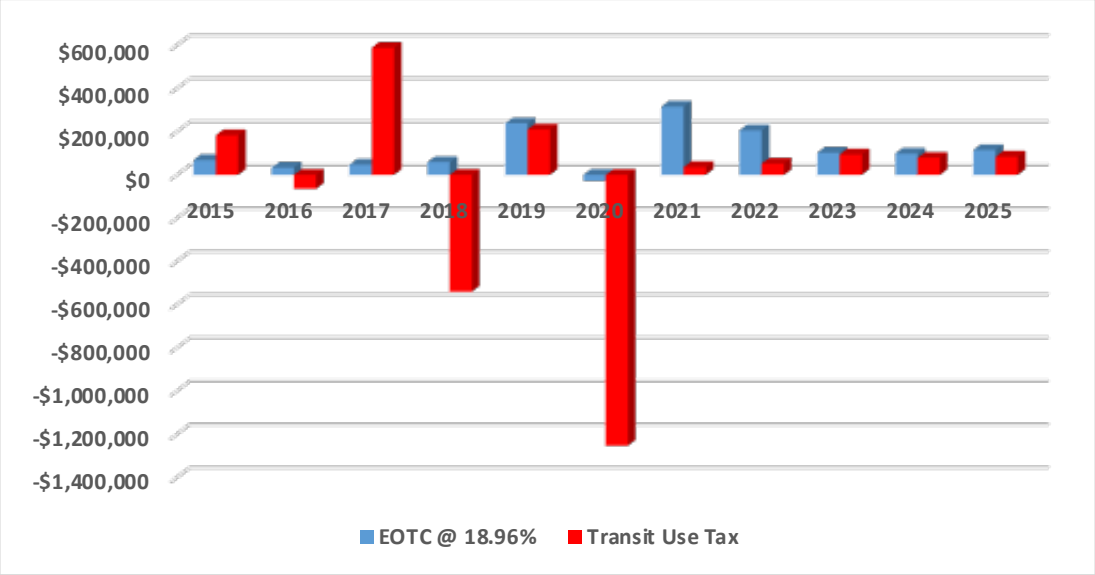
Table 5 highlights these projected changes in revenues by focusing on revenue growth. After dropping over $761,000 in 2020, EOTC revenues will grow by about $200,000 per year through 2025. The growth is propelled by gains in the ½ cent sales tax and a stabilization use tax revenues generated by the use tax on vehicles.

Table 5. Growth in ½ Cent Sales Tax, Revenue Distributions, and Use Tax

Year	*Transit 1/2 Cent Sales Tax*	*RFTA @ 81.04%*	*EOTC @ 18.96%*	*Transit Use Tax*	*EOTC Investment Income*	*EOTC Total*
2015	$362,502	$293,772	$68,730	$183,214	$6,459	$258,403
2016	$177,236	$143,632	$33,604	-$64,471	$18,443	-$12,424
2017	$250,891	$203,322	$47,569	$588,585	$13,810	$649,964
2018	$312,105	$252,930	$59,175	-$494,644	$77,211	-$358,258
2019	$1,259,418	$1,020,632	$238,786	$164,570	$128,797	$532,153
2020	-$146,273	-$118,540	-$27,733	-$690,778	-$42,795	-$761,306
2021	$1,666,858	$1,350,822	$316,036	$35,970	-$144,343	$207,663
2022	$1,084,676	$879,022	$205,655	$52,064	$11,583	$269,302
2023	$543,837	$440,726	$103,112	$94,230	$15,021	$212,363
2024	$519,863	$421,297	$98,566	$78,833	$11,845	$189,244
2025	$605,284	$490,522	$114,762	-$11,703	$5,310	$108,369

As Figure 12 illustrates, gains in the EOTC portion of the sales tax along with modest increases in use taxes support modest total growth in EOTC revenues through 2025.

Figure 12. Annual Changes in EOTC Sales and Use Tax Receipts



5.2 Impact of HB19-1240 on Revenues for EOTC

As discussed previously, HB19-1240 has substantially increased sales tax revenues but at the cost of major reductions in use tax revenues. Table 6 quantifies the effect of HB19-1240 on the EOTC's share of the sales tax. From 2005-2018, the EOTC sales tax has increased at a 4% annual rate. The column "EOTC Base No HB19-1240" shows what those sales tax revenues would have been using this historical growth rate. The impact of HB19-1240 can be gauged by the difference between: (a) the base and (b) the total amount of EOTC's sales tax revenues, labeled "EOTC Increase over Base" in Table 6. As Table 6 demonstrates, HB19-1240 had a substantial positive impact on EOTC's sales tax revenues which are projected to be more than $3.3 million higher through 2025 because of the effects of HB19-1240.

Table 6. Gauging the Impact of HB19-1240 on EOTC's Sales Tax Revenue

Year	*EOTC @ 18.96%*	*EOTC Base No HB19-1240*	*EOTC Increase over Base*
2018	$1,075,007	$1,075,007	$0
2019	$1,313,793	$1,114,641	$199,151
2020	$1,286,059	$1,155,737	$130,323
2021	$1,602,096	$1,198,347	$403,748
2022	$1,807,750	$1,242,529	$565,221
2023	$1,910,862	$1,288,339	$622,522
2024	$2,009,428	$1,335,839	$673,589
2025	$2,124,190	$1,385,090	$739,100
	=========	=========	=========
Total	$13,129,185	$9,795,529	$3,333,656

Table 7 repeats this exercise for EOTC's use tax revenue. The actual and projected levels for the use tax are shown in the second column from left. PFM used the regression analysis for the use tax described above to estimate what the level of use tax revenues would have been but for HB19-1240. The total impact from 2019-2025 is projected to be a reduction of nearly $7 million compared to what would have otherwise been expected, but for HB19-1240.

Table 7. Measuring the Impact of HB19-1240 on EOTC's Use Tax Revenue

Year	*EOTC Use Tax*	*EOTC Use Tax No HB19-1240*	*EOTC Increase over Base*
2018	$1,438,539	$1,438,539	$0
2019	$1,648,572	$1,806,811	-$158,239
2020	$395,606	$1,211,600	-$815,994
2021	$431,576	$1,321,763	-$890,187
2022	$483,640	$1,481,216	-$997,576
2023	$577,870	$1,769,808	-$1,191,939
2024	$656,703	$2,011,246	-$1,354,543
2025	$741,453	$2,270,805	-$1,529,352
	=========	=========	=========
Total	$6,373,958	$13,311,788	-$6,937,830

Table 8 brings the two types of impacts shown in Tables 6 and 7 together thereby showing the combined impact of HB19-1240 on EOTC revenues. HB19-1240 is projected to increase EOTC revenues by $3.3 million through 2025 (as shown in Table 6) while at the same time depressing use tax revenues by nearly $7 million (see Table 7). On a combined basis HB19-1240 is projected to reduce EOTC revenues by $3.6 million compared to levels without HB19-1240.

Table 8. Total Impact on EOTC Revenues from HB19-1240

Year	*EOTC Sales & Use Tax with HB19-1240*	*EOTC Sales & Use Tax without HB19-1240*	*Net Impact of HB19-1240*
2018	$2,513,546	$2,513,546	$0
2019	$2,962,365	$2,921,453	$40,912
2020	$1,681,665	$2,367,336	-$685,671
2021	$2,033,672	$2,520,110	-$486,438
2022	$2,291,390	$2,723,745	-$432,355
2023	$2,488,732	$3,058,148	-$569,416
2024	$2,666,131	$3,347,085	-$680,954
2025	$2,865,643	$3,655,895	-$790,252
	=========	=========	=========
Total	$19,503,143	$23,107,318	-$3,604,174

Finally, in considering the impacts of HB19-1240 on EOTC revenues, it is important not to lose sight of the fact that total EOTC revenues are projected to grow from 2020 through 2025. By 2025 EOTC revenue are projected to nearly regain their prior level before HB19-1240. So, while HB19-1240 pushed EOTC revenues below where they otherwise would have been, HB19-1240 is not expected to cause EOTC's revenues to fall after their big decline in 2020.

6.0 Analysis of the Potential to Transfer No-Fare Service from EOTC to RFTA

6.1 Potential Considering Revenue Forecast

Can RFTA reasonably be expected to absorb the cost of the no-fare service covering Aspen, Snowmass, and Woody Creek that is estimated to range from $814,000-to-$1.06 million between 2021 and 2025? Based on PFM's projections, the answer is yes. RFTA's revenue increased significantly in 2019 and after dipping in 2020, revenues are likely to grow substantially again this year and in 2022. These are step-ups that are not likely to be reversed anytime soon since they are based on the structural change caused by HB19-1240 and the expected growth in the area's economy.

As Table 9 shows, the combination of HB19-1240 and a rebounding economy from 2021-23, will result in strong gains in the ½ cent transit sales tax pushing RFTA's 81.04% share up strongly as well. Some of this revenue growth would have occurred without the effect of HB19-1240.

From 2005-2018, RFTA's share of the transit tax grew at a 4% annual rate as shown in the column labeled "RFTA Base No HB19-1240." The "RFTA Increase over Base" column shows the amount of additional sales tax revenues resulting from HB19-1240, which expanded the sales tax base and taxed products purchased elsewhere but delivered into Pitkin.

Table 9. RFTA Revenue Forecast and Analysis

Year	*Transit 1/2 Cent Sale Tax*	*RFTA @ 81.04%*	*RFTA Base No HB19-1240*	*RFTA Increase over Base*	*EOTC No Fare Service Cost*	*RFTA Increase Net of EOTC No Fare subsidy*
2018	$5,669,869	$4,594,862	$4,594,862	$0	NA	$0
2019	$6,929,287	$5,615,494	$4,764,269	$851,226	NA	$851,226
2020	$6,783,014	$5,496,955	$4,939,921	$557,033	NA	$557,033
2021	$8,449,872	$6,847,776	$5,122,050	$1,725,726	$814,000	$911,726
2022	$9,534,548	$7,726,798	$5,310,894	$2,415,904	$870,980	$1,544,924
2023	$10,078,385	$8,167,524	$5,506,700	$2,660,824	$931,949	$1,728,875
2024	$10,598,248	$8,588,820	$5,709,725	$2,879,096	$997,185	$1,881,911
2025	$11,203,532	$9,079,342	$5,920,235	$3,159,107	$1,060,000	$2,099,107
	=========	=========	=========	=========	=========	=========
Total	$69,246,756	$56,117,571	$41,868,655	$14,248,917	$4,674,114	$9,574,803

RFTA staff estimates the EOTC No Fare Service Cost at $814,000 in 2021 rising to $1,060,000 by 2025. Since the RFTA Increase over Base revenues are projected to be more than the No Fare Service Costs, there would be more than enough revenue increase to support the subsidy through 2025. These considerations are illustrated in Figure 13.

Figure 13. RFTA Revenues and the No Fare Subsidy

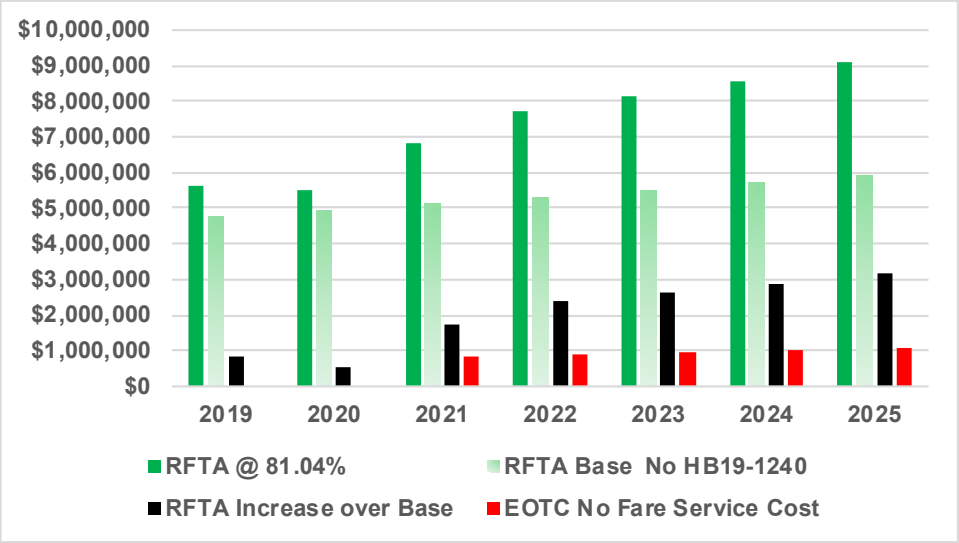
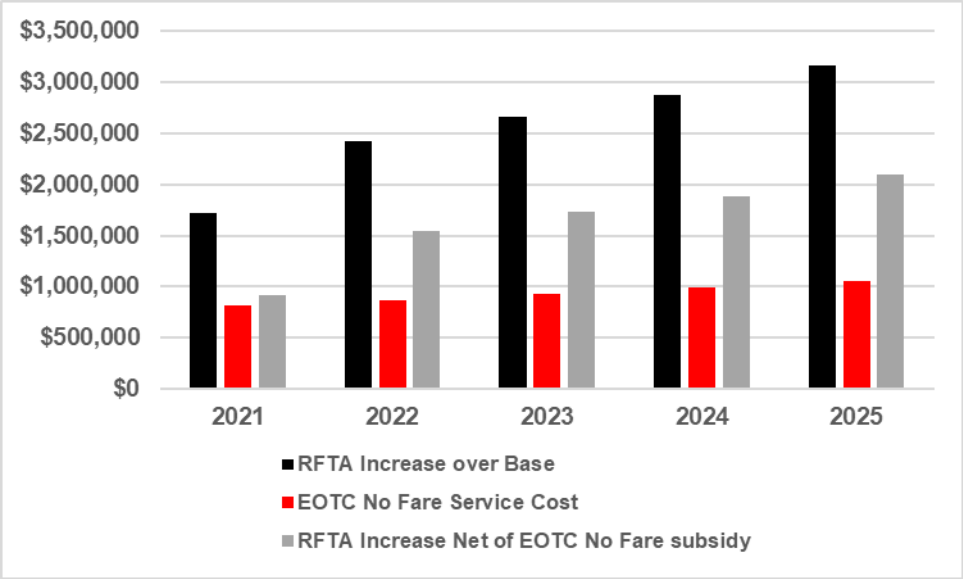


Figure 14 expands on the analysis of the no fare subsidy by showing the RFTA increase over the base, the no fare service cost, and the remaining RFTA revenue net of the subsidy. The RFTA revenue net of the subsidy is projected to range from $1.5 million in 2022 to over $2 million by 2025. Therefore, RFTA can absorb the no fare subsidy.

Figure 14. RFTA Revenue Increase Over Base, No Fare Subsidy and RFTA Increase Over Base net of No Fare Subsidy



6.2 Other Policy Considerations

Finally, there are other revenue considerations. Sales tax revenues for all EOTC communities have and will increase significantly going forward. Just as is the case for RFTA's sales tax revenues, the structural change wrought by HB19-1240, coupled with the strong economic outlook through 2025, supports the view that EOTC communities will continue to enjoy strong gains in their sales tax revenues.

References

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