

# **Improvements to the Streamlined Sales Tax Sourcing Estimates**

**Washington State Department of Revenue**

**William N. Rice, Director**

**September 2004**

## CONTENTS

	<u>Page</u>
Acknowledgements.....	iv
Executive Summary .....	v
Background.....	1
Methodology.....	2
Findings.....	5
Conclusions.....	6
Appendix A. Comparison of Improved Estimates with Original Sourcing Estimates for Calendar Year 2002	
A1. Total Combined Local Tax by Location Code	
A2. Total Combined Local Tax Listed Alphabetically	
A3. Basic and Optional Local Tax	
A4. Criminal Justice Tax	
A5. Correctional Facility Tax	
A6. Public Transportation Benefit Areas (Transit) Tax	
A7. Regional Transit Authority (RTA) Tax	
A8. Public Facilities Districts (PFDs)	
A9. Regional Centers	
A10. Metro Park Facilities Tax, King County Baseball Stadium Tax, King County Football Stadium Tax	
Appendix B. Improved Estimated Impacts of Sourcing Gains and Losses in Taxable Retail Sales for Calendar Year 2002	
Appendix C. Sensitivity Testing	
C1. Absolute Value with 5% Change in Input	
C2. Results of 5% Sensitivity Testing on Improved Estimates (Calendar Year 2002)	

Appendix D. Changes for Negatively Impacted Cities and Counties (NICS) with Improved Estimates

- D1. Summary for NICS
- D2. NICS to PICS Basic and Optional Tax
- D3. NICS with Equal or Smaller Losses Basic and Optional Tax
- D4. NICS with Greater Losses Basic and Optional Tax

Appendix E. Changes for Positively Impacted Cities and Counties (PICS) with Improved Estimates

- E1. Summary for PICS
- E2. PICS to NICS Basic Optional Tax
- E3. PICS with Equal or Greater Gains Basic Optional Tax
- E4. PICS with Smaller Gains Basic Optional Tax

## ACKNOWLEDGEMENTS

The Department of Revenue (DOR) appreciates the contributions of the following members of the Sourcing Technical Committee and the DOR staff who worked cooperatively to prepare this report.

### Sourcing Technical Committee

Al Doerschel	City of Tukwila
Dale Gowan	Grays Harbor County
Chris Haugen	King County
Robin Hunt	Thurston County
Glen Lee	City of Seattle
Bob Lothspeich	Whitman County
Scott McCarty	City of Puyallup
Glenn Olson	Clark County
Iwen Wang	City of Federal Way

### Department of Revenue Staff

#### *Research Division*

Lorrie Brown, Ph.D.	Research Project Manager
Kim Davis	Tax Policy Specialist
Don Gutmann	Operations Research Program Manager
Diane Mielke	Administrative Assistant
Mary Welsh	Assistant Director
Julianne Williams	Research Analyst

#### *Legislation and Policy Division*

Julie Sexton	Legislative Coordinator
--------------	-------------------------

#### *Executive Division*

Susan Meldazy	Project Manager
---------------	-----------------

## **EXECUTIVE SUMMARY**

A feature of the national Streamlined Sales and Use Tax Agreement (SSTA) is the sourcing of sales for retail sales tax purposes at the destination or point of delivery of the item sold. In order to conform to the SSTA, Washington State must change its method of sourcing delivered goods from the point of origin to the point of destination of the item sold. This change has the effect of shifting sales tax revenues among local taxing jurisdictions with some jurisdictions losing revenues and other jurisdictions gaining revenues.

In December 2003, the Department of Revenue (DOR) submitted a study to the fiscal committees of the Washington State Legislature on the impacts of changing the sourcing of local sales tax under the SSTA (Chapter 168, Laws 2003). A technical advisory committee was convened to develop the methodology used to estimate these impacts. In May 2004, the DOR reconvened the study technical advisory committee to re-estimate the sourcing impacts based on improved information.

The technical advisory committee met three times, first to outline the objectives of reconvening the committee, second to provide input on the methodology to be used to re-estimate sourcing impacts, and third to review the results of re-estimating the impacts and draw conclusions.

### **Objectives of the Improved Estimates**

- 1) Provide general estimates of the magnitude of sales tax dislocation that sourcing would cause, such as the total amount redistributed and the number of jurisdictions negatively impacted.
- 2) Inform policy makers on the amount of revenue required if the Legislature chooses to mitigate sales tax losses incurred by local taxing jurisdictions.
- 3) Provide estimates within a reasonable margin of error to assist policy makers in the formulation of mitigation options.

DOR research staff made systematic improvements to the model used to generate the estimates and conducted sensitivity testing to determine the confidence level of the results. As part of the sensitivity testing, they used sales tax loss data prepared by some of the cities. DOR also conducted site visits to some of the negatively impacted cities to explain the original estimates and the systematic improvements.

## Findings

- There is not much difference in the aggregate loss of sales taxes between the original and the improved estimates.<sup>1</sup> The sum of net sales tax losses for all negatively impacted tax jurisdictions is \$32.8 million in the original estimate and \$32.0 million in the improved estimate.
- The aggregate gain in sales taxes is smaller in the improved estimate than in the original estimate. The sum of net sales tax gains for all positively impacted tax jurisdictions is \$28.5 million in the improved estimate as compared to \$35.8 million in the original estimate.
- The total amount of taxable retail sales that is redistributed among jurisdictions decreased from \$12.9 billion in the original estimate to \$10.5 billion in the improved estimate.
- With the improved estimate, the total amount to mitigate negatively impacted local taxing jurisdictions is \$32.0 million. Losses to cities total \$24.8 million, to counties \$0.7 million, and to other taxing jurisdictions \$6.5 million.
- More cities lose sales tax revenues with the improved estimate (117 cities) than the original estimate (97 cities). Most of the cities that lose revenue lose less than 10 percent of their total basic and optional sales tax revenues. Fourteen cities have losses greater than 10 percent of their total basic and optional sales tax revenues.
- More counties gain sales tax revenues with the improved estimate (37 counties) than the original estimate (34 counties). Most of the counties that gain revenue gain less than 10 percent of their total basic and optional sales tax revenues. Twelve counties gain more than 10 percent of their total basic and optional sales tax revenues.

## Conclusions

- The technical advisory committee agrees that the improved estimates meet the stated objectives. The total change in taxable retail sales is acceptable given the inherent limits of survey based data for projecting individual data points.
- The technical advisory committee has limited confidence in the specific tax dollar loss estimates for individual local taxing jurisdictions.
- The technical advisory committee strongly advises against using the specific estimates for local taxing jurisdictions as a basis for determining mitigation amounts, other than on a temporary basis. These are estimates and may be affected by survey

---

<sup>1</sup> The Streamlined Sales Tax Sourcing estimates are based on taxable retail sales data for Calendar Year 2002.

imprecision, boundary changes, local fluctuations in taxable retail sales, and the passage of time.

## BACKGROUND

Nationwide there is an effort among states, local governments, and retailers to simplify the collection and administration of sales and use taxes through the provisions of a multistate agreement called the Streamlined Sales and Use Tax Agreement (SSTA). To participate in the agreement, individual states must revise and fully implement their tax laws to conform to the SSTA provisions. In 2003, the Washington State Legislature enacted Senate Bill 5783 (Chapter 168, Laws of 2003) to adopt the uniform definitions and administrative provisions of the SSTA. The Legislature has several more provisions to adopt before Washington fully conforms to the SSTA--the most controversial of which is "sourcing" for retail sales tax.

Sourcing determines the place of sale and, therefore, which jurisdiction is entitled to the sales tax generated from a particular transaction. There are two types of sourcing--origin and destination. With origin-based sourcing the sale takes place at the location from which the sale of goods and services originates. With destination-based sourcing, the sale takes place at the location where the purchaser takes delivery of the good or service. Currently, Washington State uses both origin and destination sourcing. Tax from the sale of goods only is sourced to the retail outlet or warehouse from which delivery is made. Sales tax from retail services is sourced to the place where the retail service is performed.

SSTA sourcing is destination-based for all sales of goods and services. If Washington State adopts destination-based sourcing, there is no significant loss of revenue for the state. Overall, local taxing jurisdictions do not suffer a significant loss; however, revenues shift among local jurisdictions. Local taxing jurisdictions realize losses if the taxable retail sales (TRS) attributed to goods delivered outside their jurisdiction is larger than TRS of goods delivered into their jurisdiction. Local taxing jurisdictions realize gains if they have more taxable retail sales attributable to goods delivered into their jurisdiction than goods delivered out.

In 2003, the Washington State Legislature decided to study the impacts of destination-based sourcing on local taxing jurisdictions and directed the Department of Revenue (DOR), with input from local government and technical advisory committees, to report the results of the study to the Legislature (Chapter 168, Laws 2003). In December 2003, the Department submitted the final report titled "Streamlined Sales and Use Tax Agreement Sourcing Study." In the 2004 legislative session, the DOR proposed agency request legislation (House Bill 2500 and Senate Bill 6544) to implement the remaining provisions of the SSTA, including sourcing. Both bills received hearings but did not pass.

In light of improved information, the DOR decided to make systematic improvements to the model used to create the fiscal estimates prepared for the 2003 sourcing study. In May 2004, the DOR reconvened the sourcing study technical advisory committee for three meetings--first to outline the objectives of reconvening the committee, second to provide input on the methodology to be used to re-estimate sourcing impacts, and third to review the results of re-estimating the impacts and draw conclusions. The technical



committee agreed that the improvements to the sourcing estimates should meet the following objectives:

- Provide general estimates of the magnitude of dislocation that sourcing would cause, such as the total amount redistributed and the number of jurisdictions negatively impacted.
- Inform policy makers on the amount of revenue required if the Legislature chooses to mitigate sales tax losses incurred by local taxing jurisdictions.
- Provide estimates within a reasonable margin of error to assist policy makers in the formulation of mitigation options.

After improving the estimates, DOR research staff conducted sensitivity testing to determine the confidence level of the results. As part of the sensitivity testing, they used sales tax loss data prepared by some of the cities. DOR also visited some of the negatively impacted cities to explain the original estimates and the systematic improvements to the estimates.

## **METHODOLOGY**

To calculate the sourcing estimates, DOR measured the dollar amount of delivered sales attributable to Washington State, determined where the sales originated and where the sales were delivered. It is important to remember that the total amount of delivered sales remains the same across the state, just the location of the sale changes. Each jurisdiction experiences both losses and gains that net together to produce an overall gain or loss for the jurisdiction.

The industry groups that typically deliver goods include manufacturing, printing, transportation and warehousing, wholesale, furniture retailing, electronics and appliances retailing, office supplies retailing, and other retailers.

DOR used the following data sources to estimate the taxable retail sales for firms in these industry groups:

1. DOR taxable retail sales data merged with Employment Security Department (ESD) data. This data provides taxable retail sales for each establishment in each jurisdiction for individual firms. The data also has information on each firm's industry classification.
2. Survey. DOR surveyed over 2,000 Washington firms to obtain information on their delivery patterns. From these firms DOR obtained the percentage of delivered sales, sales delivered from storefronts or warehouses, the delivery areas, and the percentage of sales delivered within the jurisdiction where the storefront or warehouse is located, within five miles of the jurisdiction, ten miles, fifteen miles, the county, and the state.

The survey also provided information on remote sales (sales made through the Internet, catalog, mail order, etc.) including the percentage of remote sales originating in Washington, the percentage of remote sales attributable to business versus households, and the counties to which remote sales are delivered.

The model merged the survey data with DOR data to match the dollar amount of taxable retail sales by location with the survey information on delivery patterns. DOR put the data into cells defined by industry and firm location (e.g., furniture retailers in Western Washington and furniture retailers in Eastern Washington).

For firms not included in the survey or that did not respond, DOR used the survey data to compute averages based on the responses for each cell and applied appropriate cell averages to these firms. For example, if the cell average for the percentage of delivered sales for Western Washington furniture retailers is 57 percent, that average applied to taxable retail sales made by every Western Washington furniture retailer that was not surveyed. The result of the merge is a database representing over 120,000 firms and each of their establishments. Using this database, DOR estimates the dollar value of delivered products from each jurisdiction. This represents sales tax losses for the jurisdiction before taking into account gains for the jurisdiction.

The sales tax gains are more difficult to measure. One source of gain is from remote sales that originate in Washington State. For any one firm, these sales usually originate from one point (or a limited number of points) and spread across the state. The estimate calculates the gains from remote sales to each jurisdiction from the survey information on deliveries. The survey data indicates the percent that is sent to business versus households, also the allocation of sales among counties. In order to allocate sales to jurisdictions within the counties, the estimate uses data on business activity and household income.

Sales tax gains also come from sales originating from in-store purchases that are delivered to customers from the store. These gains are concentrated in each store's delivery area. DOR estimated these gains using its Geographic Information System (GIS) and survey data to map delivery areas for each storefront or warehouse in the state. The GIS database pinpoints the storefronts and warehouses of more than 120,000 firms, each with concentric rings indicating delivery patterns. DOR allocated the gains within each of the concentric rings based on census block income data, then summed up the jurisdictional allocation using the GIS to translate the concentric rings back into jurisdictional boundaries.

### **Improvements to the Sourcing Estimates**

The technical committee agreed to the following data improvements before calculating the final estimates:

- *Improve the employment match between DOR and ESD data.* In the original estimates, some sales were assumed to be retail services and thus were already sourced to the point of destination. That assumption was used when a retail sale was reported to a location where the firm did not have employees. In most cases the elimination of these sales was appropriate because the lack of employees indicated that they were already destination sourced. However, because of an imperfect DOR/ESD match, some of the sales were incorrectly assumed to be retail services and excluded from the data. The improved match causes fewer sales to be removed (assumed as retail services) which raises the estimates overall.
- *Assign appropriate east/west indicator for multi-location firms.* This improvement relates to the choice of the east or west cell average for the percentage of delivered sales for firms that were not surveyed. In the original estimate, each nonsurveyed firm was assigned either eastern or western cell averages, depending on the firm's headquarters location. These averages applied to all of the firm's locations. In the improved estimate, a multi-location firm has the appropriate eastern or western cell averages applied to each of its locations. This improvement lowers the total amount of taxable retail sales redistributed.
- *Labor and Industry (L&I) warehouse match* improves the allocation of loss from remote sales. The survey asks firms whether they source their remote sales to the location of their warehouse, headquarters or the destination of the sale. In the original estimate, the database gave no indication of where a firm's headquarters was located. For firms that answered that they sourced their remote sales to their headquarters, the estimate allocated their remote sales to their location with the largest taxable retail sales. In the improved estimate, DOR uses L&I data to allocate the remote loss to the firm's known headquarters location. This change has little impact on the estimates because it only affects a few firms.
- *New industry averages.* The cell averages used for nonsurveyed firms were scrutinized for reasonableness and appropriately adjusted. A major improvement related to the cell averages of questions that had parts that add to 100 percent. It was discovered that some survey respondents that answered 100 percent to part "a" left part "b" blank instead of writing in 0 percent. In some of these cases, Washington State University keyed part "b" as missing instead of 0 percent. This resulted in incorrect calculations of the cell average of part "b." These miss-keys were corrected and the resulting industry averages calculated and used. This improvement decreases the total amount of redistributed taxable retail sales.
- *Sensitivity Testing.* Two reasons to do sensitivity testing are to determine how sensitive the estimates are to possible errors and to identify areas that need more scrutiny. Sensitivity testing consists of changing a couple of the key variables by 5 percent (both up and down). In this estimate the two variables are the percent of remote vs. in-store sales and the percent delivered. There is the possibility of error in all survey data. Given that there is 95 percent confidence in the survey,

the sensitivity analysis answers the question, “Do possible errors become exacerbated or ameliorated as they work through the estimate?”

The 5 percent change in the key variables encompasses most of the discrepancies between survey responses and the independent analyses some of the cities provided.

## FINDINGS

- There is not much difference in the aggregate loss of sales taxes between the original and the improved estimates. The sum of net sales tax losses for all negatively impacted tax jurisdictions is \$32.8 million in the original estimate and \$32.0 million in the improved estimate (see Table 1A and Table 1B).
- The aggregate gain in sales taxes is smaller in the improved estimate than in the original estimate. The sum of net sales tax gains for all positively impacted tax jurisdictions is \$28.5 million in the improved estimate and \$35.8 million in the original estimate.
- The total amount of taxable retail sales that is redistributed among jurisdictions decreased from \$12.9 billion in the original estimate to \$10.5 billion in the improved estimate.
- With the improved estimate, the total amount to mitigate local taxing jurisdictions for the loss of sales tax is \$32.0 million. Losses to cities total \$24.8 million, to counties \$0.7 million, and to other taxing jurisdictions \$6.5 million.
- Fewer cities gain and more cities lose sales tax revenues with the improved estimates than the original estimates. For most of the cities that experience an overall gain or loss the change is less than 10 percent of their total basic and optional sales tax revenues (see Table 2 and Table 3). For 14 cities the loss is over 10 percent of their total basic and optional sales tax revenues.
- More counties gain and fewer counties lose sales tax revenues with the improved estimates than the original estimates. For most of the counties that experience an overall gain or loss the change is less than 10 percent of their total basic and optional sales tax revenues (see Table 2 and Table 3).
- With the improved estimate, transit districts lose a total of \$2.3 million in sales tax. King County transit incurs the largest loss of \$3.8 million, but this is offset by gains in other transit districts. Snohomish County Public Transportation Benefit Area has the largest transit district gain of \$1.0 million (see Appendix A.6).
- With the improved estimate, the total Regional Transit Authority (RTA) sales tax loss is \$1.3 million which is approximately a 0.65 percent decrease. King County RTA

loses \$1.8 million. This is partially offset by a \$263,300 gain in sales tax in the Snohomish County RTA and a \$329,100 gain in sales tax in the Pierce County RTA (see Appendix A.7).

- Results from sensitivity testing show that the improved estimates are not very sensitive to error. Increasing or decreasing the key inputs by 5 percent changes the general results by about 7.5 percent. The sum of net losses for all cities changes by 8 percent. At a jurisdictional level, most of the cities' net losses or gains change by less than 10 percent with a 5 percent change in key inputs. These cities represent most of the taxable retail sales in the state.
- Sensitivity testing results in dramatic changes in some jurisdictions, mainly small cities that have small dollar amounts. For example, one city's estimate changes by 300 percent, from \$100 to \$300. However, some large cities, such as Kirkland, show substantial changes in the sensitivity tests.
- Sensitivity testing indicates confidence in the overall results but less confidence in the individual city estimates. The confidence level is greater with larger cities and diminishes with the smaller cities.
- Some cities conducted independent analyses to estimate their losses. The independent city estimates are closer to the improved DOR estimates than the original estimates.

## CONCLUSIONS

- The technical advisory committee agrees that the improved estimates meet the stated objectives. The total change in taxable retail sales is acceptable given the inherent limits of survey based data for projecting individual data points.
- The technical advisory committee has limited confidence in the specific tax dollar loss estimates for individual local taxing jurisdictions.
- The technical advisory committee strongly advises against using the specific estimates for local taxing jurisdictions as a basis for determining mitigation amounts, other than on a temporary basis. These are estimates and may be affected by survey imprecision, boundary changes, local fluctuations in taxable retail sales, and the passage of time.

**TABLE 1A**  
**Summary of Estimated Impacts to All Local Taxing Jurisdictions**  
**Original Estimates**

<b>Tax Type</b>	<b>Number of Counties with Gains</b>	<b>Tax Gains</b>	<b>Number of Counties with Losses</b>	<b>Tax Losses</b>	<b>Difference</b>
<b>Counties:</b>					
Basic & Optional	34	13,255,752	5	(868,413)	14,124,165
Criminal Justice	16	509,688	14	(293,656)	216,032
Correctional Facility	6	<u>345,859</u>	6	<u>(247,869)</u>	<u>97,990</u>
Total County		\$ 14,111,298		\$ (1,409,938)	\$ 12,701,360
<b>Cities:</b>					
Basic & Optional	184	13,831,021	97	(24,814,192)	(10,983,171)
Criminal Justice	102	<u>389,549</u>	158	<u>(519,686)</u>	<u>(130,137)</u>
Total City		\$ 14,220,571		\$ (25,333,878)	\$ (11,113,307)
<b>Total Counties and Cities:</b>		\$ 28,331,869		\$ (26,743,816)	\$ 1,588,053
<b>Other Taxing Districts:</b>					
Transit Districts	13	6,855,445	10	(5,569,729)	1,285,716
RTA	1	171,223	0	0	171,223
PFD	0	0	1	(95,012)	(95,012)
Regional Centers	9	323,211	11	(272,012)	51,199
Metro Park (Pierce County)	1	182,576	0	0	182,576
Baseball Stadium (King)	0	0	1	(63,853)	(63,853)
Football Stadium (King)	0	<u>0</u>	1	<u>(60,097)</u>	<u>(60,097)</u>
Total Other Taxing Districts		\$ 7,532,455		\$ (6,060,703)	\$ 1,471,752
<b>Total All Jurisdictions</b>		\$ 35,864,324		\$ (32,804,519)	\$ 3,059,805

**TABLE 1B**  
**Summary of Estimated Impacts to All Local Taxing Jurisdictions**  
**Improved Estimates**

Tax Type	Number of Counties with Gains	Tax Gains	Number of Counties with Losses	Tax Losses	Difference
<b>Counties:</b>					
Basic & Optional	37	16,688,700	2	(450,500)	17,139,200
Criminal Justice	21	279,300	9	(197,600)	81,700
Correctional Facility	9	<u>222,900</u>	3	<u>(69,400)</u>	<u>153,500</u>
Total County		\$ 17,190,900		\$ (717,500)	\$ 16,473,400
<b>Cities:</b>					
Basic & Optional	164	8,198,800	117	(24,425,000)	(16,226,200)
Criminal Justice	194	<u>245,300</u>	69	<u>(412,400)</u>	<u>(167,100)</u>
Total City		\$ 8,444,100		\$ (24,837,400)	\$ (16,393,300)
Total Counties and Cities:		\$ 25,635,000		\$ (25,554,900)	\$ 80,100
<b>Other Taxing Districts:</b>					
Transit Districts	13	2,577,000	10	(4,903,400)	(2,326,400)
RTA	0	0	1	(1,285,000)	(1,285,000)
PFD	0	0	1	(100)	(100)
Regional Centers	12	243,400	8	(187,300)	56,100
Metro Park (Pierce County)	1	83,500	0	0	83,500
Baseball Stadium (King)	0	0	1	(82,900)	(82,900)
Football Stadium (King)	0	<u>0</u>	1	<u>(78,000)</u>	<u>(78,000)</u>
Total Other Taxing Districts		\$ 2,903,900		\$ (6,536,700)	\$ (3,632,800)
Total All Jurisdictions		\$ 28,538,900		\$ (32,091,600)	\$ (3,552,700)

**TABLE 2**  
**Number of Cities and Counties that Would Gain Basic and Optional Sales Tax Revenues**

<b>Range of Gain as a Percent of Total Basic and Optional Sales Tax Revenue</b>	<b>Number of Cities within Range (Original Estimate)</b>	<b>Number of Cities within Range (Improved Estimate)</b>	<b>Number of Counties within Range (Original Estimate)</b>	<b>Number of Counties within Range (Improved Estimate)</b>
Between 0% and 2% Gain	45	64	4	2
Between 2% and 5% Gain	45	34	12	10
Between 5% and 10% Gain	40	26	4	13
Between 10% and 20% Gain	25	10	8	9
Over 20% Gain	<u>29</u>	<u>30</u>	<u>6</u>	<u>3</u>
Total	184	164	34	37

**TABLE 3**  
**Number of Cities and Counties that Would Lose Basic and Optional Sales Tax Revenues**

<b>Range of Loss as a Percent of Total Basic and Optional Sales Tax Revenue</b>	<b>Number of Cities within Range (Original Estimate)</b>	<b>Number of Cities within Range (Improved Estimate)</b>	<b>Number of Counties within Range (Original Estimate)</b>	<b>Number of Counties within Range (Improved Estimate)</b>
Between 0% and 2% Loss	25	49	2	0
Between 2% and 5% Loss	31	27	2	0
Between 5% and 10% Loss	24	27	0	2
Between 10% and 20% Loss	13	13	1	0
Over 20% Loss	<u>4</u>	<u>1</u>	<u>0</u>	<u>0</u>
Total	97	117	5	2