

McCULLOUGH RESEARCH

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To: Southeast Uplift Board
From: Robert McCullough
Subject: Data and Methodological Errors in the Portland Commercial Street Fee

Overview:

During the last six months, the Portland Bureau of Transportation has attempted to assemble a complex set of statistics on revenues, trips, building size, employment, and areas of activity for Portland businesses and agencies.

As with all “big data” analyses, the devil is in the details. No single data source contains all of the data required for this analysis, nor does any single data source comprehensively contain even one of the data that would be required to calculate such a complex tax proposal.

The resulting spreadsheets reflect an attempt to “make bricks without straw.” Large numbers of errors are present in the analysis, including omissions of significant companies and agencies, mis-categorization of companies and agencies when some data is present, errors in the transfer of data from existing City of Portland databases, and a pervasive level of inexperience with Portland’s infrastructure and business community. Since errors occur pervasively throughout the calculations of the commercial tax table, it is impossible to simply “fix” the calculations after the fact.

The scale of the errors also raises the necessity for a major rehabilitation of the city’s data in order to meet the resulting litigation for the thousands of businesses who will be overcharged due to the faulty calculations.

The Business Category Criteria and Fees Table

The table setting out the taxes for business and agencies was included in the non-residential ordinance. It has since been amended several times. The original table corresponding to the materials received from the Portland Bureau of Transportation is:

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Business Category Criteria and Fees
 Based on fees per business entity by type and size
 \$23 Million Gross Revenue Target (+/- \$2 M)

Entity pays rates in column "A" if it meets two of the three criteria: 0-5 employees, gross revenue <\$250,000, or developed square footage less than 2,500.	Entity pays rates in column "B" if it meets two of the three criteria: 6-20 employees, Gross Revenue between \$250,000 - \$2,500,000, or developed square footage within range shown in table.	Default rate for entities that do not meet the criteria for other columns.	Entity pays rates in column "D" if it meets two of the three criteria: over 50 employees, Gross Revenue > \$8,000,000, or developed square footage greater than value shown in table.
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Employees Annual Gross Revenue	A 0 - 5 < \$250,000		B 6-20 \$250,000 - \$2,500,000		C 21-50 \$2,500,000 - \$8,000,000		D > 50 > \$8,000,000		External** Monthly Equivalent Fee
	* Sqft. <	Monthly Equivalent Fee	* > Sqft. <	Monthly Equivalent Fee	* Sqft.	Monthly Equivalent Fee	* Sqft. >	Monthly Equivalent Fee	
Group 1									
Agricultural	2,500	\$3.00	2,500 - 30,000	\$6.00	30,000 - 70,000	\$12.00	70,000	\$24.00	\$6.00
Churches, Charities, Associations	2,500	\$3.00	2,500 - 5,000	\$6.00	5,000 - 10,000	\$12.00	10,000	\$24.00	\$6.00
Education	2,500	\$3.00	2,500 - 35,000	\$6.00	35,000 - 80,000	\$12.00	80,000	\$24.00	\$6.00
Parks and Open Areas	2,500	\$3.00	2,500 - 300,000	\$6.00	300,000 - 675,000	\$12.00	675,000	\$24.00	\$6.00
Services	2,500	\$3.00	2,500 - 10,000	\$6.00	10,000 - 30,000	\$12.00	30,000	\$24.00	\$6.00
Other	2,500	\$3.00	2,500 - 5,000	\$6.00	5,000 - 10,000	\$12.00	10,000	\$24.00	\$6.00
Group 2									
Construction	2,500	\$6.00	2,500 - 10,000	\$12.00	10,000 - 20,000	\$24.00	20,000	\$48.00	\$12.00
Industrial	2,500	\$6.00	2,500 - 20,000	\$12.00	20,000 - 40,000	\$24.00	40,000	\$48.00	\$12.00
Recreation	2,500	\$6.00	2,500 - 10,000	\$12.00	10,000 - 20,000	\$24.00	20,000	\$48.00	\$12.00
Transportation	2,500	\$6.00	2,500 - 20,000	\$12.00	20,000 - 40,000	\$24.00	40,000	\$48.00	\$12.00
Group 3									
Office	2,500	\$9.00	2,500 - 15,000	\$18.00	15,000 - 35,000	\$36.00	35,000	\$72.00	\$18.00
Institutional	2,500	\$9.00	2,500 - 35,000	\$18.00	35,000 - 80,000	\$36.00	80,000	\$72.00	\$18.00
Group 4									
Restaurant	2,500	\$15.00	2,500 - 5,000	\$30.00	5,000 - 10,000	\$60.00	10,000	\$120.00	\$30.00
Retail	2,500	\$15.00	2,500 - 15,000	\$30.00	15,000 - 40,000	\$60.00	40,000	\$120.00	\$30.00
Group 5									
Lodging	2,500	\$18.00	2,500 - 35,000	\$36.00	35,000 - 75,000	\$72.00	75,000	\$144.00	\$36.00
Medical	2,500	\$18.00	2,500 - 18,500	\$36.00	18,500 - 40,000	\$72.00	40,000	\$144.00	\$36.00

Non-profit entities classified as per use, then extended a 50% discount. Non-profit discount already included for Education and Churches, Charities, Associations categories.
 * Square footage based on developed use in buildings, except in Agricultural and Parks / Open Areas, which is based on parcel size.
 ** External entities are located outside of Portland with City business licenses. Rates are set equal to Column B.
 Fee rates shown are derived roughly from rounded averages of trip-based fees by category.
 Fee table subject to further refinement and validation.

The basic approach to reading the table is for a business owner to assemble data on his revenue, employees, and building size, by location, and to choose the column that best fits these criteria. He then figures out which row best describes his business.

Available Data:

On November 3, 2014, at the Southeast Uplift Board Meeting, Mark Lear, Projects and Funding Manager at the Portland Bureau of Transportation, agreed to provide the workpapers behind the Business Fee. When the materials were not provided by November 12, 2014, Southeast Uplift made a formal open document request. After the materials were not provided, Southeast Uplift attorneys filed an appeal with the court. A compromise was arrived at on December 10, 2014 to receive the documents on December 22, 2014. On December 23, 2014, after our lawyers had readied a contempt of court motion, the City of Portland provided three small spreadsheets.

This analysis is based on the three spreadsheets provided on December 23, 2014. They are:

“Cayenta_Comm_Category_Redacted.xlsx” using trip based data allocates the cost of the tax among different categories;

“BFF_summary_agr_redacted.xlsx” applies the allocation formula derived above to the various fees by category of activity; and,

“BLIS_Categories_Redacted.xlsx” using data from the Portland Business License Database (BLIS) takes the tax table and figures out who pays how much.

Two of the three spreadsheets are partially redacted. In addition, many of the original formulas have been erased and replaced with fixed numbers.

There is substantial evidence that the materials provided as workpapers for the existing Business Fee Table are different than the original workpapers.¹

The Basic Commercial Street Fee Model:

The basic model for the tax is to assign a basic tax rate to all entities.² In the case of this table, the basic tax rate is \$6 per month per entity per location:

¹ Spreadsheets generally contain formulas that calculate values from basic data. When the formulas are removed from the spreadsheet, it means that changes in basic data – for example, corrections -- will not update the final results. This would make the workpapers useless in the original calculation.

² “Entity”, in the proposed tax, represents a commercial firm, a non-profit agency, or a government.

<i>Scenario:</i>	\$23 Million Revenue BEFF					
<i>Size:</i>	A	B	C	D	Ext	Multiplier
(blank)	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Agricultural	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Churches, Charities, Ass	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Construction	\$6.00	\$12.00	\$24.00	\$48.00	\$12.00	2
Education	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Industrial	\$6.00	\$12.00	\$24.00	\$48.00	\$12.00	2
Institutional	\$9.00	\$18.00	\$36.00	\$72.00	\$18.00	3
Lodging	\$18.00	\$36.00	\$72.00	\$144.00	\$36.00	6
Medical	\$18.00	\$36.00	\$72.00	\$144.00	\$36.00	6
Office	\$9.00	\$18.00	\$36.00	\$72.00	\$18.00	3
Other	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Parks and Open Areas	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Recreation	\$6.00	\$12.00	\$24.00	\$48.00	\$12.00	2
Residential	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Restaurant	\$15.00	\$30.00	\$60.00	\$120.00	\$30.00	5
Retail	\$15.00	\$30.00	\$60.00	\$120.00	\$30.00	5
Services	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1
Transportation	\$6.00	\$12.00	\$24.00	\$48.00	\$12.00	2
Unknown	\$3.00	\$6.00	\$12.00	\$24.00	\$6.00	1

The “Multiplier” is used to increase the tax rate for certain categories. For example, categories with “1” as a Multiplier pay \$6/Month with size “B.” Categories with a Multiplier of “2” will pay \$12/Month. The actual fee is adjusted by the size of the firm, calculated in the “BLIS_Categories_Redacted.xlsx” spreadsheet. Transportation, a major industry in Portland, has a Multiplier of “2”. Medical has a Multiplier of “6” indicating that an employer of the same size in Medical will pay a tax three times as high as Transportation.⁴

The basis for the Multiplier is found in the “Cayenta_Comm_Category_Redacted.xlsx” spreadsheet. “Cayenta” refers to the billing system at the Portland Water Bureau. The specific sheet used in this spreadsheet is “Cayenta_Comm” which calculates values that are averaged over entities in that category and then rounded to find the “Multiplier.”⁵

³ “BFF_summary_agr_redacted.xlsx”, sheet “Rate_Table Rounded”.

⁴ The formula in the cell for Medical, size “B”, is “=C\$34*\$G42”. The value in C\$34 is \$6/Month. \$G42 is Multiplier for Medical or “6”.

⁵ The actual calculations in “Cayenta_Comm_Category_Redacted”, sheet “Cayenta_Comm” have been erased. Only the calculated values remain.

The logic behind the calculation is cited directly in the Business Category Criteria and Fees Table in a note at the bottom of the page: “[f]ee rates shown are derived roughly from rounded averages of trip-based fees by category.”⁶

The list of entities in “Cayenta_Comm_Category_Redacted.xlsx” is very different than the entities in “BLIS_Categories_Redacted.xlsx”. The number of entities in “Cayenta_Comm_Category_Redacted.xlsx” is only 13,758. The number of entities that are used to derive the Multiplier ranges from 2 in “Other” to 4,554 in “Services.” The “Other” category, for example, includes Port of Portland and Metro Regional Parks. The decision to categorize the Port of Portland as “Other,” rather than “Transportation,” and not include “Metro Regional Parks” in the “Parks and Open Areas” would seem questionable.

By comparison, the table of entities used to calculate the actual payment under the tax is larger, 131,208, and is also incomplete.⁷ There is little overlap between the entities used to calculate the Multiplier and those used to estimate the revenue from the tax.

Calculating the Multiplier

The first step in the Street Fee Table is the calculation of a factor used to weight different categories of entities. This factor is called the “Multiplier.”

A review of the transportation category in the Cayenta_Comm_Category_Redacted.xlsx spreadsheet includes a curious collection of businesses. To a degree, some of the 52 entries make sense, although the inclusion of others can only be described as bizarre.

Some major transportation players are represented – Union Pacific, Burlington Northern, and TriMet. Also found in the Transportation category is a tattoo parlor, a consignment shop, residential rentals, senior housing, and the Volunteers of America.

Union Pacific has two entries in Transportation: 1830 Center Street and 5424 SE McLoughlin Boulevard. The location at 1830 Center Street is actually occupied by a different firm.⁸ The location at McLoughlin is occupied by six other firms – not the Union Pacific. Only the 1830 Center Street location has trips associated with it.

Burlington Northern has three locations: 14420 N. Bybee Lake, 3930 NW Yeon, and 3500 NW Yeon. Unlike the Union Pacific entries, Burlington Northern is actually at these locations. The only trips associated with Burlington Northern are at 14420 N. Bybee Lake which is identified as a warehouse on PortlandMaps.

⁶ <https://www.portlandoregon.gov/transportation/article/508983>

⁷ “BLIS_Categories_Redacted.xlsx”, sheet “BLIS Data”.

⁸ The Portland Business License database indicates that this location is occupied by “T P Freight Lines”.

None of the major transportation facilities owned by the Union Pacific or the Burlington Northern railroads appears to have been included in the transportation category. The omission is significant since the two railroads own large rail yards in southeast Portland, northeast Portland, and northwest Portland. Each yard is the source and destination of heavy truck traffic to and from final locations.

TriMet fares slightly better. One of the two major TriMet bus facilities are included – the one at 9710 SE Powell. The other major facility, on SE 17th, has been omitted.

FedEx is included at 1528 SE Bybee – the local print and shipping shop for Sellwood – but not its distribution facilities on Swan Island. UPS is also omitted. United Airlines – at 582 trips per month – is included, although this is equivalent to just two or three flights per month. Delta and other major airlines are not.

By comparison, the U.S. Census indicates that there are 496 transportation companies in Portland, 14 of which would be large enterprises with over 250 employees.⁹ Vehicle registrations for Multnomah County indicate that heavy trailer trucks comprise about a sixth of all vehicles in the area.¹⁰

The critical calculation – the trip entries in “Cayenta_Comm_Category_Redacted.xlsx” – would appear to be completely inaccurate, including tattoo parlors and resale shops while omitting the major transportation entities. Overall, according to the calculations in this spreadsheet, the entire transportation category in Portland has less than one third the trips generated by one restaurant -- Famous Daves BBQ Restaurant at 9911 NE Cascades Parkway.¹¹

Correction of the transportation Multiplier calculation is impossible, since the formulas in “Cayenta_Comm_Category_Redacted.xlsx” have been erased.

Logically, the scale of transportation activities in Portland would normally place them in the highest trip category resulting in a Multiplier of 6. This would triple the taxes in this category for each size. It would also reduce the taxes for all other categories since the total target revenue would be exceeded unless the basic tax per month were reduced.

Commissioner Novick has stated that errors of this type could be “repaired” at a later date. This is incorrect unless the entire tax was voted upon by the City Commissioners. The actual values in the Business Category Criteria and Fees Table are incorrect so

⁹ <http://www.census.gov/econ/cbp/download>

¹⁰ http://www.oregon.gov/ODOT/DMV/pages/news/vehicle_stats.aspx

¹¹ “Cayenta_Comm_Category_Redacted.xlsx” indicates that Famous Daves BBQ has 976,211 trips per month. The total trips for the transportation category in this spreadsheet is 256,187.

simply sending a tax bill to the missing firms would not correct the overcharges to other categories entities in the Portland area.

Calculating the Expected Revenues

In order to find the expected revenues from the tax, “BLIS_Categories_Redacted.xlsx” takes data from the Portland Business License Database and calculates the “size” of 131,208 different locations. The sizes correspond to the A to D columns in the Business Category and Fees Table.

The entities range from #HOTASIANSINPORTLAND to ZZZ, Allen. As with the entities listed in “Cayenta_Comm_Category_Redacted.xlsx”, the selection of entities ranges from reasonable to extraordinary.

#HOTASIANSINPORTLAND, for example, is described as “Rental or Leased Property Owned by the Business” and placed in the “Office” category. The Oregon Secretary of State’s web site indicates that the firm has ceased operations.¹²

The origin of much of the data is Portland Business License Database, but only some entries have been imported. Major Portland firms have been omitted. In Transportation, for example, the spreadsheet includes 3,557 entities, but excludes most of the entities listed in “Cayenta_Comm_Category_Redacted.xlsx”. Major transportation entities like the Union Pacific Railroad, United Airlines, and TriMet have simply been ignored.

The 131,208 locations represent 78,207 different entities. To check how accurate the BLIS download to “BLIS_Categories_Redacted.xlsx” was, 78,207 entries from the Portland Business License web site were downloaded and compared to the data from “BLIS_Categories_Redacted.xlsx”.¹³

Although most entries in “BLIS_Categories_Redacted.xlsx” can be found in BLIS, many are “non-compliant” and many others are ambiguous.¹⁴ Of the 78,207 entities, 11,384 appear to be non-compliant.

¹²

http://egov.sos.state.or.us/br/pkg_web_name_srch_inq.show_detl?p_be_rsn=1659148&p_srce=BR_INQ&p_print=FALSE.

¹³ <http://www.portlandoregon.gov/revenue/lookup/>

¹⁴ The Business License database describes “non-compliant” as:

“There are a number of potential reasons why the Bureau may be unable to confirm compliance based on your search. For example, the business may be out of compliance with the City of Portland business license law; the business may have recently submitted filings or it may have recently made payments that have not yet been entered into the database; there may be an error on the account that

Overall, the match between BLIS and “BLIS_Categories_Redacted.xlsx” is poor. It is impossible to enumerate the number of BLIS entries that have been dropped from “BLIS_Categories_Redacted.xlsx”, but spot checks indicate that the number is large.

For example, both Commissioner Novick and Robert McCullough are in BLIS and missing from “BLIS_Categories_Redacted.xlsx”. The match between locations reported in BLIS and “BLIS_Categories_Redacted.xlsx” is also poor. For example, Willett, Howard John shows 76 locations on BLIS, but only 50 on “BLIS_Categories_Redacted.xlsx”. In sum, the spreadsheet had 19,255 fewer locations than the actual Business License database.¹⁵

Overall, although the number of entities reported in “BLIS_Categories_Redacted.xlsx” is larger than that in “Cayenta_Comm_Category_Redacted.xlsx”, it appears that both listing are equally idiosyncratic. Use of either set of firms requires a major effort to check and verify their inclusion, not to mention an effort to identify the large number of entities that has been excluded from the calculations.

The logic of the revenue calculation depends on revenue, building size, and employment. “BLIS_Categories_Redacted.xlsx” contains estimates of all three. The estimates are very doubtful. For example, while “BLIS_Categories_Redacted.xlsx” does not include a number of major employers, its total estimate of employment for Portland is 2,044,045. This is far from a credible number. Total employment in Portland is on the order of 276,081.¹⁶

Thus, one of the three important determinants of the “Size” column in the Portland Commercial Table is off by a factor of eight.

The largest employer in Portland, according to this spreadsheet, is “ALLS WELL THAT ENDS WELL INC PC” which is entered as “Misc. Nondurable Goods.” Their business size is “C” which would indicate \$2,500,000 to \$8,000,000 annual revenue and an office from 18,500 to 40,000 square feet in size.

prevents the Bureau from being able to confirm compliance at this time; the business may be in compliance under a different name or entity type; you may be viewing the wrong business. Many businesses have similar names, and as businesses move they do not always inform the Bureau; you may be viewing a closed account. The business may have updated information under a different name.”

¹⁵ This value is somewhat conservative since 2,718 references in “BLIS_Categories_Redacted.xlsx” matched more than one entry in the BLIS database. If there was a way to reconcile the ambiguous matches, the number would be larger.

¹⁶ Actual employment levels change continuously. This estimate is from <http://www.infoplease.com/us/census/data/oregon/portland/economic.html>.

Actually, a call to the firm indicates that it has three employees, operates a colon hydrotherapy practice and works out of a small office at 316 SE 28th with a developed floor space of 5,998 square feet.¹⁷ Clearly, this small firm would be eligible for a smaller tax – either “A” or “B” depending on their revenues.

The second largest employer in Portland in the spreadsheet is “WYNNDOS BOOKSELLERS INC” with 29,558 employees. This is a small bookstore on the campus of the Multnomah University. The spreadsheet has them entered as a “Book Superstore.”

The largest employer in the “Transportation” category is “TRICOR AMERICA INC” with 18,388 employees. Curiously, it is reported as business size “B” – primarily since their office is so small – size “1”. In actuality, TriCor’s web site directs customers to the UPS Store at 3463 NE Sandy Boulevard.

Given the many errors in “BLIS_Categories_Redacted.xlsx”, it seems almost certain that the estimated revenues are considerably higher than that the correct data would produce. The underestimation would be slightly offset if the major companies dropped from the data were included in the calculations.

Conclusion

Review of the data released by the Portland Bureau of Transportation indicates that, regardless of the design of the tax, the underlying data suffers from massive errors of omission, commission, and misinterpretation.

Since many of these errors help determine the actual tax rate, the problem cannot be corrected after the fact. Moreover, if implemented in its current form, a major data gathering effort will be required to meet the objections of the thousands of businesses and agencies who are being overcharged.

¹⁷ https://www.portlandmaps.com/detail.cfm?action=Assessor&&propertyid=R177584&state_id=1N1E36CB%20%201300&address_id=159159&intersection_id=&dynamic_point=0&place=316%20NE%2028TH%20AVE&city=PORTLAND&neighborhood=KERNS&seg_id=113697&x=7654509.966&y=684856.357