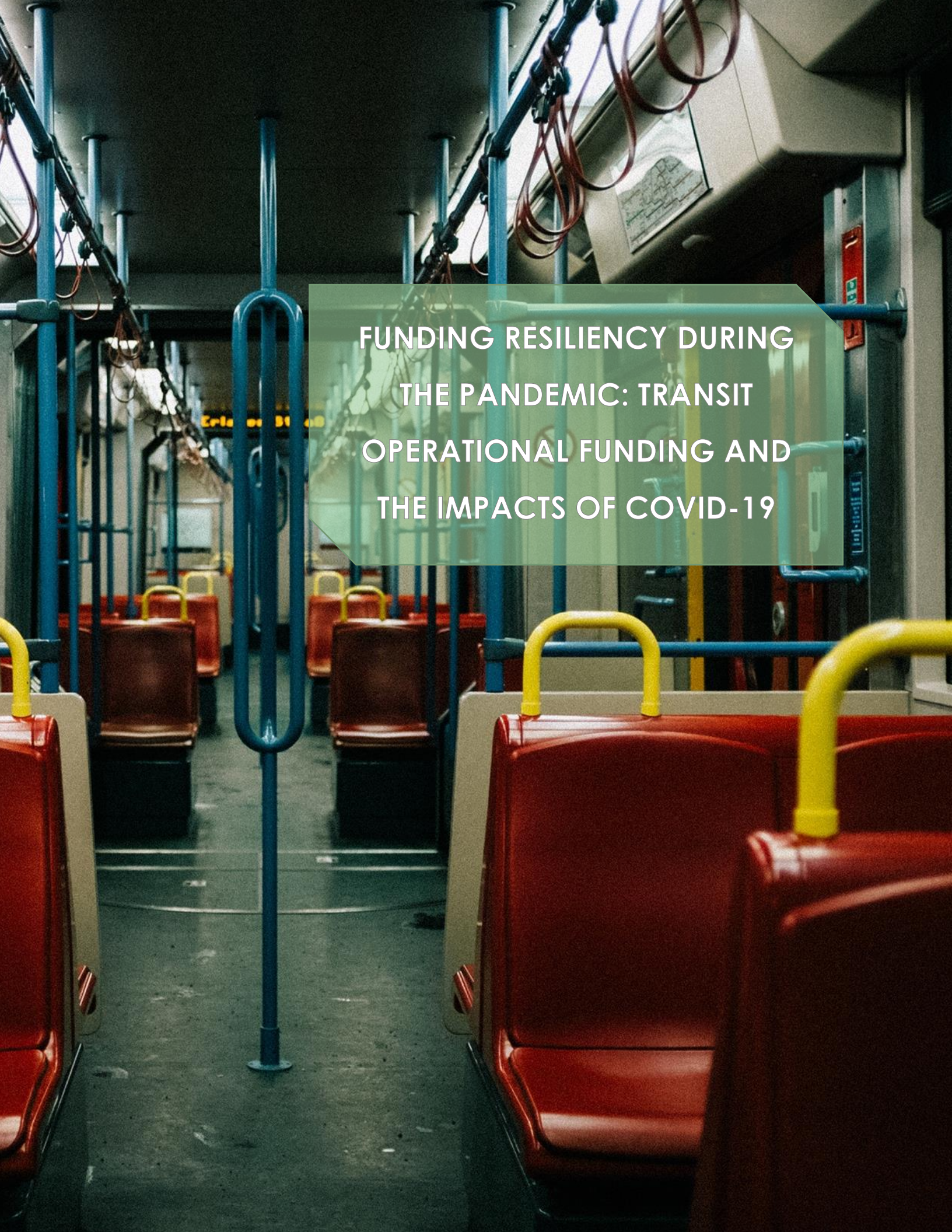

FUNDING RESILIENCY DURING THE PANDEMIC: TRANSIT OPERATIONAL FUNDING AND THE IMPACTS OF COVID-19

Funding Resiliency During the Pandemic: Transit Operational Funding and the Impacts of COVID-19

By Joanna Xiao

Supervised by Ahmed El-Geneidy
School of Urban Planning
McGill University
Montréal, Québec, Canada

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Policy Brief

The Issue

Transit agencies in Canada and the U.S. have often struggled with funding their daily operations. Operational funding is for day-to-day services including fuel for vehicles, maintenance staff, drivers, controllers, customer service staff, administration, and more. The onus of operational funding has often fallen onto transit agencies and local governments, with some support from the provincial or state and federal level governments. In light of the COVID-19 pandemic, traditional revenue streams like farebox revenue, revenue gained from passenger fares, and other agency-generated revenue streams that are dependant on passengers (eg. park & rides, concessions) saw a sharp decrease with the fall of ridership. This forced agencies to become even more dependant on government subsidies, leaving them in a challenging position coming out of the pandemic. This report seeks to derive some insight on current practices in funding transit operations in Canada and the U.S. and determine the impacts of the COVID-19 pandemic to funding.

Methods and Data

Ridership data was sourced from the U.S. Federal Transit Administration (FTA) and provided by the Canadian Urban Transit Association (CUTA). Financial data, including operational budgets, capital budgets, and revenue streams, were extracted from annual reports, proposed budgets, and financial statements of each agency. This information was aggregated into eight major revenue streams displayed in the report. Federal emergency funding was sourced from USASpending.gov, the open data source of U.S. federal spending information, and through individual agencies' financial documents and press releases with the help of CUTA.

Findings

Most agencies in Canada and the U.S. are partially dependant on farebox revenue, other agency-generated revenue streams, and government funding, for their operational costs. Canadian transit agencies are most often a part of or a subsidiary of the local municipal government, with a few excceptions. In comparison, U.S. transit agencies have service areas that span different municipalities, counties, even crossing state lines, with a range of statutory authorities. Canadian agencies more commonly receive operating assistance and subsidies at the local and provincial levels, whereas U.S. agencies receive revenues from taxes from local and state governments.

Out of the 30 agencies with the highest passenger counts, in Canada and the U.S., six different operational funding typologies emerged. These typologies are based on the mix of eight summarized revenue streams used by agencies to fund their operations, with the most popular being funding from agency, municipal, local, state/provincial, and federal streams. This diversity in revenue streams also helped some agencies, who weren't as dependant on farebox revenues, to weather the COVID-19 pandemic. Both Canada and the U.S. federal governments stepped in to provide emergency operational funding to transit agencies, which is uncommon as federal funding for transit often goes towards capital projects (e.g. new infrastructure like rail lines or stations) not operations. So far, there has been three rounds of funding, lasting as long as the COVID-19 pandemic, however this is an unsustainable form of funding. Agencies are worried that with ridership that is slow to return, coupled with increased costs of labour and equipment, they may need to cut costs and service, causing less ridership, and leading to a transit death spiral. Despite the strong emphasis of transit as an essential service throughout the pandemic, agencies are still struggling with recovery.

Recommendations

Upper level governments should re-evaluate their priorities for transit agencies and local governments. If the onus continues to be placed on transit agencies to fund their own operations, where agencies are expected to match a service level agreement and continue providing service despite the costs, they should be given more power and statutory authority to grow and diversify their revenue streams so they may stay resilient against ridership fluxuations, and economic crises.

Agencies continue to work with their municipal, local, state/provincial and federal governments to find innovative solutions to fund transit. All actors can also look at international examples of agencies that are able to fund not only their daily operations, but sometimes their capital projects as well.

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Introduction

Transit funding has been a conundrum ever since the inception of public transit. Most often, funding can be divided into two major streams, operational and capital costs. Operational costs refer to day-to-day activities needed to run the transit system, for example: wages for drivers, fuel for vehicles, parts for maintenance and safety compliance, wages for maintenance and administrative staff, and more. Capital projects, or capital costs, refers to one-time financial payments usually for an infrastructure project or a major purchase of equipment for service improvement. Examples of these would be expanding a rail line through building new stations, putting down new rail tracks, or purchasing of new bus fleet or trains. Transit has been chronically underfunded in the U.S. and Canada. Other than farebox revenues, agencies are heavily reliant on government support for both operational and capital costs and often run at a deficit. Transit operations have often taken a back seat in receiving funding compared to capital projects. Transit agencies address this through increasing fares, decreasing service, or other funding strategies.

Then, at the end of 2019, the COVID-19 pandemic started, and has had major impacts to transit agencies across Canada and the U.S. The resilience of different public transit funding streams have been put to the test, with major losses seen in streams like farebox revenue, with the sharp decrease in ridership due to lockdown and stay-at-home orders. Agencies also saw a decrease in other passenger-generated revenue streams, and an increase in cleaning expenses due to the pandemic. This increased operational costs even more, while cutting down on one major stream of operational funding – farebox revenue. This forced agencies to start cutting costs through employee layoffs, cutting service, and more. Agencies often ran the transit service at a loss, to ensure that passengers who were still using transit could get to where they needed to be. As a result of major operating deficits, Canadian and U.S. transit agencies received a large emergency funding injection from the federal government (U.S.) and from a partnership between the federal and provincial governments (Canada) in support of their operations. This, however, is an unsustainable form of operational funding, and while ridership has started increasing again, it will not match the expected passenger counts that were estimated prior to the COVID-19 pandemic. This puts transit agencies in a challenging position with the pressing need to secure more sustainable funding sources as the world starts to recover from the COVID-19 pandemic.

This report will focus on operational funding for transit and seeks to discover how 30 agencies across Canada and the U.S. fund their operations, and how they have been impacted by the COVID-19 pandemic. The report will start with a short literature review summarizing the main themes and trends in transit funding as a whole, and then move into a methodology section which will go over how the financial data from the 30 agencies was amassed and put together. Then, there will be a section on transit operational funding before the COVID-19 pandemic, looking at the different revenue streams used, and funding typologies that appear among the 30 agencies. This will be followed by a section covering the impacts of COVID-19 on transit operational funding. Then, an analysis section will cover the prior themes that have appeared throughout the report and discuss possible future themes as the COVID-19 pandemic continues followed by a conclusion.

Literature Review

There exists a broad and varied body of literature on this subject with no clear consensus, as many best practices are specific to the environment, context, population, and governance structure of the transit agency's service area. Much of the literature is specific to one or two transit agencies, and comparative studies all focus on transit agencies as a whole. Therefore, this literature review aims to provide a short high-level summary of general transit funding and some of the overall trends.

Historically, transit systems in the capacity that exists now, have existed as early as the 1800s, first being created as privately run, profit-driven enterprises. These private enterprises provided transport in the form of horse-drawn carriages, passenger rails, streetcars, and more. When this form of transit became unprofitable due to the rise of the private automobile, these enterprises were taken over by public agencies, usually local governments at the municipal, county, or regional levels. These new public transit agencies, with the support from the federal government, invested in capital projects to improve existing aging infrastructure to serve the greater public. Since then, municipal, local and state/provincial governments have taken on most of the responsibility and financial burden for public transit agencies.[iii]

Public transit is now seen as an essential service, similar to education or health services, and agencies are expected to provide a certain level of service to the area that it operates in as mandated by their local and state/provincial governments. Therefore, transit systems often run service at a loss, meaning that passenger loads are often lower than max capacity. Buses and trains will still run, even if no one uses them, as they must maintain the expected service-levels. This, among other things, means that public transit agencies usually run at a deficit, and although agencies do collect passenger fares, and use other ways to generate revenue, they still rely heavily on funding from municipal, local, state/provincial, and federal sources for financial support. Unfortunately, currently public transit is considered underfunded in many places, caused by a mix of rising operational and capital costs, limited government financial support, and a decreasing ridership.[iii]

As federal funding for public transit has taken a smaller role through time, more of the responsibilities, including financial, have been placed onto state, local, and municipal levels of government to support and sustain public transit.[iv] Operational costs that are not covered by agency-generated revenue usually get support from state/provincial, local and municipal funds, whereas federal and state/provincial funds account for the majority of capital projects. For transit agencies, it can be difficult to secure continuous long-term funding for operations, as there is a preference to fund capital projects which are usually one-time amounts.[v] This leads transit agencies to sometimes build beyond the service needs, which then leaves the transit agencies with larger operational costs. The increased day-to-day activities and maintenance create an even larger financial burden on transit agencies, state, and local governments that support agencies day-to-day operations.

In the U.S. and Canada, there are federal grant programs available to transit agencies, most of which support building new transit infrastructure, service expansions or other capital projects. The rest of the funding is sourced from agency-generated revenue, state/provincial, municipal, and local support. At the state/provincial and local levels, there are a variety of different funding mechanisms and revenue streams that can be used to fund a transit system. Traditional methods include fares, government subsidies, and taxes. Non-traditional methods include value capture schemes, different forms of toll or road pricing, emission charges, property development taxes, and more. When looking at the different schemes, it is important to keep in mind that local governments like municipalities, counties, and regional governments, do not have as much legislative power as federal or state/provincial

governments to enforce taxes to raise revenues for services,[vi] which also contributes to the overall underfunding of transit services.

In terms of transit operational funding as a standalone, not much has been written on this topic. Most of the literature regarding funding for transit has focused more on overall funding for transit agencies, or funding for specific agencies and their major capital projects. There is also not an extensive amount of research done on the COVID-19 pandemic, and its impacts to transit operational funding. As of this report being written, it is difficult to estimate the total impacts, as the world is still experiencing the effects of the pandemic. The following report aims to take a comparative look at different agencies in Canada and the U.S. and see with which funding mechanisms they derive the most operational funding from, and what impacts the COVID-19 pandemic has had on operational funding.

Methodology

To look at the different ways that transit agencies funded their operations, 30 transit agencies across Canada and the U.S. were selected based on the highest ridership counts (in unlinked passenger trips) in 2019[1]. This was first done to narrow down the list of agencies. This information was first found using the Federal Transit Administration (FTA)'s National Transit Database (NTD) (U.S. source)[vii], and by contacting the Canadian Urban Transit Association (CUTA) (Canadian source).

Then, the 2019 operational, capital and total budgets for the U.S. agencies were extracted from the NTD, and these numbers were then cross-referenced with the 2019 proposed budgets of each U.S. and Canadian agency. 2019 was chosen as it was the last year before the impacts of the COVID-19 pandemic were seen on public transit in the U.S. and Canada. When numbers for the operational, capital, or total budgets were inconsistent, the amounts from the agency's financial documents were used. The numbers that were only available from the NTD and not validated through agency financial documents were left in italics. Paratransit budgets and revenues were left out, where possible.

In the cases where budgets from the agency were not precisely available through their documents, the following adjustments were made:

- The TTC operational budget does not include the paratransit (Wheeltrans) budget of $149 million.
- LA Metro provided a revenue and expenses breakdown of individual departments, however specific operational and capital budgets were indistinguishable. Therefore, the operations numbers used were the specific departments of "Transportation Infrastructure Development" and Metro Transit Operations & Maintenance. Due to this, there are possibly amounts missing from the operational budget, therefore the revenue streams were measured against the total budget (which was a confirmed amount found in the annual financial report)
- The numbers for the MTA agencies (New York City Transit, Bus Company, Long Island Rail Road, Metro-North Rail Road Company) were taken from the total expenses after depreciation, using the accrual statement of operations by category for all the MTA subsidiaries. The numbers from the non-reimbursable/reimbursable pages in the budget were used.
- The MBTA did not have a specific number for the 2019 capital budget, the numbers were taken from the capital projects 2019 – 2023 (amounting to $8.0 billion) and divided by five. To note, capital budgets are not often evenly divided like this over the years, and it often depends on the project timeline. Projects can also go over or under budget.
- Similarly, Edmonton Transit Service also did not have a specific 2019 capital budget allocation, only a capital budget that will last from 2019 – 2022, Therefore the number ($4.8 billion) and divided by four. To note, capital budgets are not often evenly divided like this over the years, and it often depends on the project timeline. Projects can also go over or under budget.

[1] The Maryland Transit Administration and County of Miami-Dade were originally part of the list, but were taken out as the financial documents of these two agencies were not readily available and the next two agencies were used as a part of the list

- King County Department of Metro Transit (services Seattle) uses a biennial budget, the proposed operating budget covering 2019 – 2020. Like the above agencies, this proposed operational budget ($1.9 billion) was divided by 2. The proposed capital budget ($2 billion) covers six years and was therefore evenly divided by six. To note, capital budgets are not often evenly divided like this over the years, and it often depends on the project timeline. Projects can also go over or under budget.

Next, a full list of the operational funding streams was put together for the 30 transit agencies. This was extracted from annual reports, financial statements, and proposed budgets by the transit agencies or their governing bodies (for example, transport authorities or municipalities), to get the best understanding of how finances were before the fall in ridership and operational revenue due to the COVID-19 pandemic. When the fiscal year did not match with the calendar year, the 2018-2019 fiscal year numbers were used. These revenue streams were compiled into an excel spreadsheet, and where possible the numbers taken were all from the original adopted budgets, not the end-of-year numbers, or any budgetary reviews done throughout the year.

These revenue streams were then reorganised into eight broader categories and four tiers of governance. These were best grouped based on the entire list of individual revenue streams that different agencies use to fund their operations. These categories are:

- Agency – Farebox Revenue
    - Revenue derived from passenger fares including tickets and passes
- Agency – Other Revenues
    - All other revenues, not including passenger fares, for example advertising and park & rides
- Municipal and Local - Operating Assistance and Subsidies
    - Any funding labelled operating assistance, or allocated from specific funds to subsidize transit operations at the local level
- Municipal and Local – Taxes
    - Dedicated taxes, or allocated tax revenue for operations at the local level
- Provincial/State - Operating Assistance and Subsidies
    - Any funding labelled operating assistance, or allocated from specific funds to subsidize transit operations at the provincial or state level
- Provincial/State – Taxes
    - Dedicated taxes, or allocated tax revenue for operations at the provincial or state level
- Federal and Provincial/State – Other
    - An umbrella stream that encompasses federal and state support when it appeared for some U.S. agencies
- Federal - Operational Assistance and Grants
    - Most federal level grants only apply to capital costs, with some small exceptions that will appear here

The four tiers of governance are (1) agency level; (2) municipal and local-level (including county and towns); (3) provincial or state level; and (4) federal level. Revenue stream 8, or Federal and Provincial/State – Other, was included as a few agencies on the list had an umbrella term in their proposed operational budgets that encapsulated both state-level and federal-level financial support. This can be seen more clearly in Table 1 and 2 in the following section.

These streams were then normalized by the 2019 ridership counts (by unlinked passenger trips on conventional transit). This was to create a more accurate comparison between regions based on the passenger counts. These numbers were used to create the funding typology figures, summary tables, and the U.S. and Canadian agency figures seen in the following section.

COVID-19 federal emergency funding for Canada was located from individual transit agency documents and news reports with the help of CUTA, and for the U.S. was found through USAspending.gov. While these allocations are happening in real-time, some more information may have become available while this report was being written. The data for the COVID-19 section was collected during June and July 2020. Federal emergency funding was chosen to look at the similarities and differences that the Canadian and U.S. governments had towards public transit. This was put into tables and a chart for an overall look at the different agencies. The U.S. agencies amount eligible was provided at a national level, however the Canadian agencies were not. Some of the Canadian agencies did not provide the amounts eligible, or the amounts received, so they were taken out of the subsequent tables and figure.

Transit Operational Funding

In this section, different forms of transit operational funding are analyzed based on the 30 transit agencies in Canada and the United States (U.S.). The first subsection will discuss the types of revenue streams that were found, and how they were summarized. The second subsection will discuss differences in U.S. and Canadian operational funding and revenue streams. The last section will discuss the different operational funding typologies found in all 30 agencies.

Revenue Streams

The 2019 revenue streams for operational funding of the 30 transit agencies were extracted from national databases, and then cross-referenced with available financial documents, proposed budgets, and annual reports. This was then summarized into the below 2 tables (Table 1 and 2).

Table 1: Summary of Agencies and Budgets

Agency	Service Area	Province/State	Country	Operational Budget	Capital Budget	Total Budget
MTA New York City Transit	New York-Newark	NY-NJ-CT	US	$12,905,158,000	$3,774,500,000	$16,679,658,000
Toronto Transit Commission	Toronto	ON	CA	$1,911,000,000	$1,883,500,000	*$3,794,500,000*
Chicago Transit Authority	Chicago	IL-IN	US	$1,513,636,343	$558,810,000	*$2,072,446,343*
TransLink	Greater Vancouver Area	BC	CA	$2,013,786,000	$619,818,000	*$2,633,604,000*
Los Angeles County Metropolitan Transportation Authority	Los Angeles-Long Beach-Anaheim	CA	US	$1,888,300,000	$2,018,800,000	$6,610,700,000
Massachusetts Bay Transportation Authority	Boston	MA-NH-RI	US	$2,057,300,000	*$1,600,440,000*	*$3,657,740,000*
Washington Metropolitan Area Transit Authority	Washington	DC-VA-MD	US	$1,837,843,000	$1,279,000,000	$3,116,843,000
Southeastern Pennsylvania Transportation Authority	Philadelphia	PA-NJ-DE-MD	US	$1,453,021,000	$749,620,000	*$2,202,641,000*
New Jersey Transit Corporation	New York-Newark	NY-NJ-CT	US	$2,315,900,000	$1,460,000,000	*$3,775,900,000*
City and County of San Francisco	San Francisco-Oakland	CA	US	$1,137,500,000	$521,124,218	*$1,658,624,218*
OC Transpo	Ottawa	ON	CA	$610,948,000	$137,027,000	*$747,975,000*
Edmonton Transit Service	Edmonton	AB	CA	$365,874,000	$1,200,000,000	*$1,565,874,000*
MTA Bus Company	New York-Newark	NY-NJ-CT	US	$1,076,947,000	$238,400,000	*$1,315,347,000*
San Francisco Bay Area Rapid Transit District	San Francisco-Oakland	CA	US	$910,100,000	$1,418,300,000	*$2,328,400,000*
King County Department of Metro Transit	Seattle	WA	US	$945,270,288	$333,333,333	*$2,223,873,909*
Metropolitan Atlanta Rapid Transit Authority	Atlanta	GA	US	$496,500,000	$485,003,874	*$981,503,874*
Denver Regional Transportation District	Denver-Aurora	CO	US	$755,412,415	$830,744,000	*$1,586,156,415*
Tri-County Metropolitan Transportation District of Oregon	Portland	OR-WA	US	$710,122,724	$274,200,000	*$984,322,724*
Port Authority Trans-Hudson Corporation	New York-Newark	NY-NJ-CT	US	$438,745,000	$350,807,000	*$789,552,000*
Metropolitan Transit Authority of Harris County, Texas	Houston	TX	US	$626,210,000	$285,967,275	*$912,177,275*
San Diego Metropolitan Transit System	San Diego	CA	US	$426,696,248	$81,680,000	*$508,376,248*
GO Transit (Metrolinx)	Greater Toronto and Hamilton Area	ON	CA	$913,600,000	$755,000,000	*$1,668,600,000*
Metro Transit	Minneapolis-St. Paul	MN-WI	US	$445,500,000	$3,204,108,000	*$3,649,608,000*
Winnipeg Transit	Winnipeg	MB	CA	$204,206,000	$39,771,000	*$243,977,000*
Dallas Area Rapid Transit	Dallas-Fort Worth-Arlington	TX	US	$544,265,823	$291,519,681	*$835,785,504*
Regional Transportation Commission of Southern Nevada	Las Vegas-Henderson	NV	US	$295,189,291	$68,570,601	*$363,759,892*
Société de transport de Montréal	Montréal	QC	CA	$1,310,998,000	$149,902,000	$1,460,900,000
Calgary Transit	Calgary	AB	CA	$445,334,000	$299,064,000	*$744,398,000*
MTA Long Island Rail Road	New York-Newark	NY-NJ-CT	US	$2,069,548,000	*$265,500,000*	*$2,335,048,000*
Metro-North Commuter Railroad Company	New York-Newark	NY-NJ-CT	US	$1,925,997,000	$889,000,000	*$2,814,997,000*

Table 1 depicts a list of the 30 agencies and their 2019 proposed budgets. The budget numbers are displayed in USD or CAD respective to the agency's location. From Table 1, it appears that older agencies allocate more of their total budget to operational costs versus capital costs. Perhaps this is due to the younger agencies who are still building infrastructure to support their growing populations, whereas older agencies are focusing on maintaining existing infrastructure. The table is in order of largest ridership by unlinked passenger trips with the MTA New York City Transit at the top, which also has the largest operational, and overall budget compared to the rest. The largest capital budget is also the MTA New York City Transit's, closely followed by Metro Transit, operated by the Metro Council in Minneapolis. Metro Transit's operational budget, however, is much smaller than that of the MTA New York City Transit. In Canada, the largest agency is the Toronto Transit Commission (TTC) operating in Toronto, Ontario. The

TTC has the largest capital and overall budget of the Canadian agencies, however TransLink, which operates in the Metro Vancouver Area, has the largest operational budget.

Table 2: Summarized Revenue Streams

Agency	Measured Against	Agency - Farebox Revenue	Agency - Other Revenues	Municipal and Local - Operating Assistance and Subsidies	Municipal and Local - Taxes	Provincial/State - Operating Assistance and Subsidies	Provincial/State - Taxes	Federal and Provincial/State - Other	Federal - Operational Assistance and Grants
MTA New York City Transit	Total Budget	34.03%	16.85%	3.88%	0.00%	1.86%	25.19%	0.00%	0.00%
Toronto Transit Commission	Operational Budget	62.57%	4.84%	0.00%	32.55%	0.00%	0.00%	0.00%	0.00%
Chicago Transit Authority	Operational Budget	38.85%	5.69%	0.33%	0.00%	8.03%	34.53%	13.77%	0.00%
TransLink	Operational Budget	31.99%	11.41%	0.00%	19.11%	1.07%	19.21%	0.00%	16.29%
Los Angeles County Metropolitan Transportation Authority	Total Budget	4.58%	35.21%	6.38%	51.07%	0.00%	2.28%	0.00%	0.48%
Massachusetts Bay Transportation Authority	Operational Budget	32.64%	3.73%	0.00%	0.00%	0.00%	59.20%	2.22%	0.00%
Washington Metropolitan Area Transit Authority	Operational Budget	38.81%	7.32%	34.80%	0.00%	20.10%	0.00%	0.00%	0.23%
Southeastern Pennsylvania Transportation Authority	Operational Budget	33.53%	2.84%	7.49%	0.00%	48.21%	0.00%	0.00%	5.12%
New Jersey Transit Corporation	Operational Budget	42.57%	11.72%	0.00%	0.00%	13.28%	3.55%	6.84%	22.04%
City and County of San Francisco	Operational Budget	18.33%	37.42%	44.25%	0.00%	0.00%	0.00%	0.00%	0.00%
OC Transpo	Operational Budget	12.33%	32.86%	48.90%	0.00%	0.00%	0.00%	0.00%	0.00%
Edmonton Transit Service	Operational Budget	38.09%	1.77%	61.98%	0.00%	0.00%	0.00%	0.00%	0.00%
MTA Bus Company	Total Budget	20.56%	2.47%	62.10%	0.00%	0.00%	0.00%	0.00%	0.00%
San Francisco Bay Area Rapid Transit District	Operational Budget	53.39%	7.22%	0.59%	34.22%	3.48%	0.71%	0.00%	0.00%
King County Department of Metro Transit	Operational Budget	21.75%	21.84%	0.01%	50.01%	0.00%	0.00%	0.00%	3.03%
Metropolitan Atlanta Rapid Transit Authority	Operational Budget	26.22%	4.28%	0.00%	49.85%	0.00%	5.04%	0.00%	14.98%
Denver Regional Transportation District	Total Budget	10.31%	2.68%	0.00%	0.00%	0.00%	42.14%	0.00%	5.47%
Tri-County Metropolitan Transportation District of Oregon	Operational Budget	16.69%	3.72%	0.00%	0.00%	0.28%	58.86%	0.00%	13.05%
Port Authority Trans-Hudson Corporation	Total Budget	24.18%	1.56%	0.00%	0.00%	0.00%	0.00%	12.14%	0.00%
Metropolitan Transit Authority of Harris County, Texas	Total Budget	7.39%	2.16%	0.00%	63.01%	0.00%	0.00%	0.00%	8.23%
San Diego Metropolitan Transit System	Operational Budget	21.58%	5.24%	0.10%	10.37%	16.83%	0.00%	0.00%	14.34%
GO Transit (Metrolinx)	Operational Budget	68.70%	4.86%	0.00%	0.00%	26.44%	0.00%	0.00%	0.00%
Metro Transit	Operational Budget	11.20%	2.24%	8.28%	0.00%	10.01%	48.36%	0.00%	7.49%
Winnipeg Transit	Operational Budget	42.38%	2.51%	34.55%	0.00%	20.55%	0.00%	0.00%	0.00%
Dallas Area Rapid Transit	Total Budget	10.22%	3.76%	0.00%	75.15%	0.00%	0.00%	0.00%	0.00%
Regional Transportation Commission of Southern Nevada	Operational Budget	23.88%	1.38%	0.00%	53.91%	0.00%	0.00%	22.63%	41.84%
Société de transport de Montréal	Total Budget	**0.00% ****	3.27%	86.47%	**0.00%****	0.00%	0.00%	0.00%	0.00%
Calgary Transit	N/A								
MTA Long Island Rail Road	Operational Budget	31.85%	18.41%	**0.00% ***	0.00%	**0.00% ***	**0.00% ***	0.00%	0.00%
Metro-North Commuter Railroad Company	Operational Budget	39.36%	4.61%	**6.16% ***	0.00%	**0.00% ***	**0.00% ***	0.00%	0.00%

* = MTA Long Island Rail Road and MTA Metro-North Railroad were both allocated state and local-level subsidies under MTA Commuter Railroads. The exact allocations were not specified and have not been included in this table.[2]

** = As of 2017, the majority of the Société de transport de Montréal (STM)'s finances, including farebox revenues, expenses, and funding sources, are governed by the Autorité régionale de transport métropolitain (ARTM). Any regional or municipal contributions, or operational revenue streams, including farebox revenue and municipal operating assistance or taxes are streamlined through the ARTM, but the specific numbers were not specified in the STM's 2019 Budget.[3]

Table 2 shows the 30 agencies and the breakdown of their revenue streams that fund operational costs. Specific revenue streams were streamlined and summarized into eight broader categories and four tiers of governance. These categories are (1) Agency – Farebox Revenue; (2) Agency – Other Revenues; (3) Municipal and Local - Operating Assistance and Subsidies; (4) Municipal and Local – Taxes; (5) Provincial/State - Operating Assistance and Subsidies; (6) Provincial/State – Taxes; (7) Federal and Provincial/State – Other; and (8) Federal - Operational Assistance and Grants. The four tiers of governance are (1) agency level; (2) municipal and local-level (including county); (3) provincial or state level; and (4) federal level. Revenue stream 8, or Federal and Provincial/State – Other, was included as a few agencies on the list had an umbrella term in their proposed operational budgets that encapsulated both state-level and federal-level financial support. These streams will be further broken down later in the document.

These revenue streams have been measured against the proposed operational budgets, or in instances where the specific revenue streams used to balance the operational budget was not clearly stated, they were measured against the proposed total budgets. The numbers from the revenue streams are also from the proposed budgets,

[2] The numbers can be found on page 31 under "MTA COMMUTER RAILROADS SUBSIDY ALLOCATION" of the MTA 2019 Adopted Budget HERE: https://new.mta.info/sites/default/files/2019-03/MTA-2019-Adopted-Budget-February-Financial-Plan_2019-2022.pdf

[3] STM's 2019 budget can be viewed here: https://www.stm.info/sites/default/files/pdf/fr/budget2019.pdf

which may differ slightly from the real or adjusted 2019 end-of-year numbers. These numbers were divided by ridership counts (ridership by unlinked passenger trips in 2019), and that percentage is presented in the above table.

$$\text{Revenue Stream (\%)} = \frac{\left(\text{Proposed Revenue Stream (in \$)} \;/\; \text{Ridership Counts (in unlinked passenger trips)}\right)}{\text{Proposed Operational or Total Budget}}$$

In Table 2, it is seen that all agencies get a portion of their operational budget from farebox revenue and other agency-generated revenue. Other agency-generated revenue can include revenue from advertising, and commercial agreements. It also shows that municipality and local governments often give operational funding support through taxes, or operational assistance, rarely both. Table 2 also shows that there is a large variety of dependency on different streams of funding, no agency is exactly alike, and there is no major consistency.

The four agencies at the bottom of the table, the société de transport de Montréal (STM), Calgary Transit, MTA Long Island Rail Road and Metro-North Commuter Railroad Company, were excluded from some of the figures, as there was some ambiguity in their revenue streams. The STM uses farebox funding and receives operational support through operational assistance or taxes from the City of Montréal, however as most of the STM's finances are governed and streamlined through the Autorité régionale de transport métropolitain (ARTM), a regional transportation organization for the Communauté métropolitaine de Montréal, the specific numbers were not available.[viii] In the situation of Calgary Transit, this transit agency is operated by the City of Calgary. The agency's operational budget is part of the total City's operational budget. It appears that revenues earned by all City departments are collected into one revenue stream and redistributed into the total City operational and capital budgets.[ix] Lastly, the two MTA commuter rails, the MTA Long Island Rail Road and Metro-North Commuter Railroad Company, were not included as they were both allocated state and local-level subsidies under MTA Commuter Railroads,[x] however the exact breakdown of the subsidy was not specified as they were allocated a lump-sum to cover both commuter railroads. The distribution is decided by the MTA and it is not always even.[xi]

These numbers were further used for the below figures to determine different transit operational funding typologies. A more detailed version of Table 1 and 2 with summarized revenue streams is available in the appendix for further reading.

Figure 1: Canadian and U.S. Transit Agencies Revenue Streams for Operational Funding

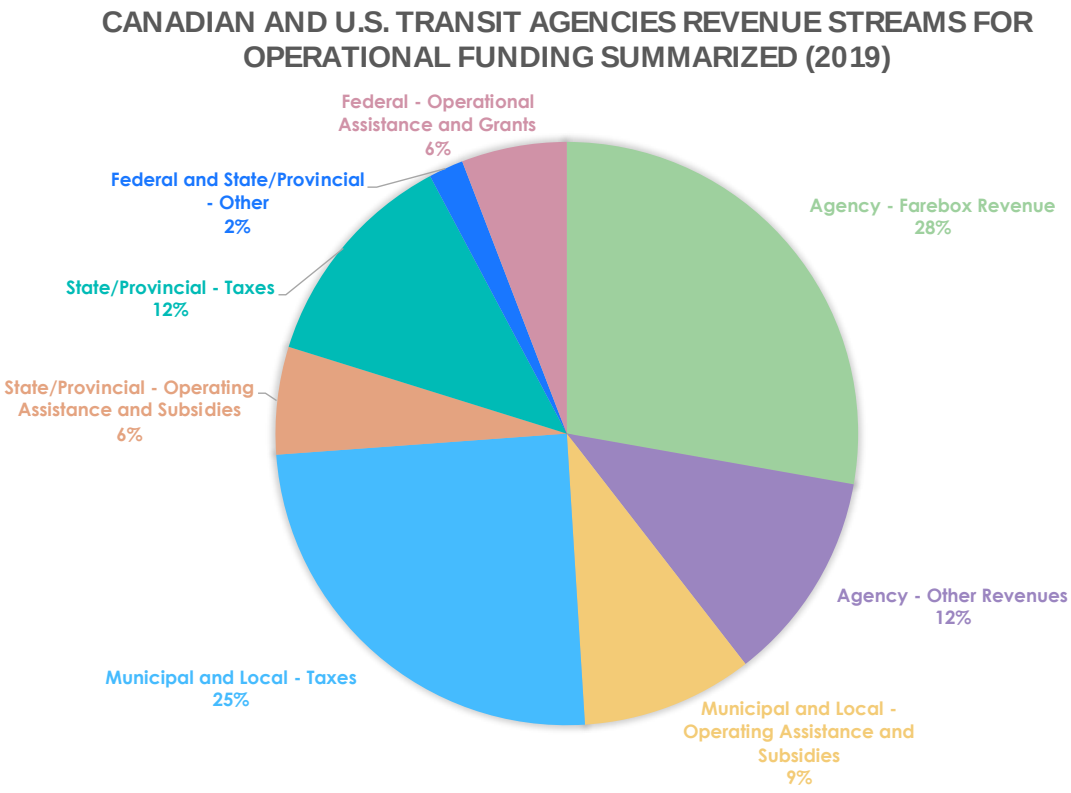


Figure 1 shows revenue streams for operational funding in 2019 (or the fiscal year of 2018-2019), using the information from Table 1 and 2. In 2019, the largest revenue stream for operational funding on average across all 30 transit agencies was farebox revenue at 32%. Farebox revenue is revenue earned from riders and users of the conventional transit system. This revenue stream was used by all 30 agencies. The second largest revenue stream is from municipal and local taxes, this included dedicated transit taxes, or portions of taxes allocated for transit. The third largest revenue stream is other operational revenues earned from the transit system. This includes revenue from activities such as advertising, and commercial agreements. It appears most agencies invest their farebox revenue and other agency-generated revenue back into their operational budgets, making up about 40% of the operational budget on average.

Federal-level operational funding is the smallest portion of the revenue streams, whereas agency-generated revenue is the largest. Much of federal assistance is directed towards capital projects, with much less given to transit operations. The U.S. federal government provides grants to public transit systems for capital activities, operating expenses, and state administration through their different grant programs[xii] but this does not make up a major part of operational funding.

Table 3: Number of Agencies Using Each Stream and the Range

Revenue Streams	Number of Agencies that use it	Range of % of Operational or Total Budget	
		Min	*Max*
Agency - Farebox Revenue	30	4.58%	68.70%
Agency - Other Revenues	30	1.38%	37.42%
Municipal and Local - Operating Assistance and Subsidies	18	0.01%	86.47%
Municipal and Local - Taxes	12	10.37%	75.15%
Provincial/State - Operating Assistance and Subsidies	14	0.28%	48.21%
Provincial/State - Taxes	13	0.71%	59.20%
Federal and Provincial/State - Other	5	2.22%	22.63%
Federal - Operational Assistance and Grants	13	0.23%	41.84%

This table displays the eight revenue streams and the number of agencies that use that revenue stream to fund their operational expenses. The third column shows the percentage of the operational or total budget that is covered by that revenue stream. This shows that the range that each revenue stream covers for a specific transit agency is quite large. There's a lot of variation between each maximum and minimum percentage, which shows that each agency has a very different combination and reliance on revenue streams. Some agencies, as seen in the number of agencies that use the revenue streams, do not use some revenue streams at all to fund their operational expenses. Agencies that are highly dependent on one revenue stream, for example GO Transit which got 68.70% of its 2019 operational budget from farebox revenue, could be more at risk than other agencies that depend on an array of revenue streams. The Federal and Provincial/State – Other revenue stream included for the 5 U.S. agencies had a miscellaneous revenue stream which merged the two levels of governance. With federal-level operational assistance and grants, apart from the Regional Transportation Commission of Southern Nevada at 41.84%, the other agencies that use this revenue stream all fall under 25% of the budget. The stream with the largest maximum to minimum variation is Municipal and Local – Operating Assistance and Subsidies. The max number at 86.47% subsidies comes from the STM and their new funding model as of 2017. All of their agency-generated revenue (including farebox revenue) goes to the ARTM and is reallocated based on operational needs. Only a few revenue streams in other revenues stay within the STM. Apart from the STM, the Edmonton Transit Service uses operational assistance at the municipal level to support 61.98% of its operational costs, whereas the King County Department of Metro Transit, servicing the Seattle area, uses municipal and local-level operating assistance and subsidies to cover only 0.01% of its operational budget.

The agencies in which farebox revenue covers the largest amount of the operational budget are GO Transit at 68.70%, the Toronto Transit Commission (TTC) at 62.57%, and the San Francisco Bay Area Rapid Transit District (BART) at 53.39%. The agencies with the smallest amount of the operational budget covered by farebox revenue are Metro Transit in Minneapolis at 11.20%, OC Transpo at 12.33%, and Tri-County Metropolitan Transportation District of Oregon (TriMet) at 16.69%. The agencies with the smallest amount of the total budget that is covered by farebox revenue are Metro Transit servicing Minneapolis, Los Angeles County Metropolitan Transportation Authority (LA Metro), and the Metropolitan Transit Authority of Harris County, Texas servicing the Houston area.

Table 4: Individual Revenue Streams

Agency – Farebox Revenue	Agency – Other Revenues	Municipal and Local – Operating Assistance and Subsidies	Municipal and Local – Taxes	Provincial/State – Operating Assistance and Subsidies	Provincial/State – Taxes	Federal and Provincial/State – Other	Federal – Operational Assistance and Grants
Fares, passes, and other user fees for the transit system	*see Table 5*	Local or municipal operating assistance (dependant on the service area), regular payments made by the city or counties	Property tax	Operating assistance from the state, (eg. New York State Operating Assistance: a statewide mass transportation program that provides direct State aid to the MTA. The State Legislature appropriates it on an annual basis.)	*see Table 6*	Operating grants received from the Provincial and Federal Governments and various subsidy income	Security grants to increase police ability and detect and deter potential attacks of terrorism
		Statutory required contribution from municipalities and counties in the service area	City building fund levy	Reduced fare subsidy			Capital and Preventive Maintenance
		Hydro levy	Sales tax	Additional funding for tourism routes			Urbanized Area formula grant funds (Section 5307)
		Route guarantee subsidies		Capital lease subsidy			State of Good Repair Program
		Property tax		Lease cost subsidy			Capital lease subsidy
							Section 5310 Enhanced Mobility of Seniors & Individuals with Disabilities
							Section 5339 Buses and Bus Facilities Grants Program
							Fixed Guideway Modernization

Table 1 and 2 summarize eight different revenue streams used by transit agencies. The next three tables (Tables 4, 5 and 6) list the individual types of revenue streams that were observed when going through the financial documents and annual reports. Table 4 shows an overview of all the individual revenue streams that are encapsulated in the eight revenue streams that were shown in the first two tables. Table 5 will show the Agency – Other Revenues stream in more detail. Table 6 will show the Provincial/State – Taxes stream in more detail.

Table 4 shows that there are many methods in which agencies can get operational funding. Some of the unique ways are highlighted below.

- *Route Guarantee Subsidies,* used by the Southeastern Pennsylvania Transportation Authority (SEPTA), are payments made under separate agreements between SEPTA and various local entities to fully fund the deficits generated by service extensions implemented by specific request. [xiii]
- *Additional funding for tourism routes,* used by the Washington Metropolitan Area Transit Authority, who gets funding through a partnership between DDOT, DC Sustainable Transportation and National Park Services (NPS), providing visitors, commuters and residents door-to-door transportation to museums, monuments and memorials along the National Mall [xiv]
- *Reduced fare subsidy*, used by the Chicago Transit Authority (CTA), where the CTA provides free and reduced-fare trips to qualified riders based on federal, state, or local mandates. Then the state provides partial support for this mandate, with the reduced fare subsidy. The subsidy is a reimbursement provided to local transit agencies by the Illinois General Assembly. [xv]
- *Federal Urbanized Formula Grants*, this grant is predominantly used for capital costs and service improvements, however for urbanized areas with populations less than 200,000, operating assistance is an eligible expense[xvi]

Table 5: Individual Revenue Streams: Agency – Other Revenue

Agency - Other Revenues			
Agency provided services (for public)	**Agency provided services (for private)**	**Internal**	**Translink (B.C., Canada) only**
Park & Ride	Advertising (eg. on buses, trains, platforms, digital billboards)	Employee Parking	Fuel tax
Special events, outside city services & charters	Taxi fees	Cash adjustments	Parking rights tax
Vending machines	Scrap sales	Previous year carryforward	Replacement tax
ATM revenue	Lease income (eg. Property leases, airright leases, right-of-way leases, including fiber optics and antennae sites)	Financial Investments	New real estate development tax
Parking fees	Station vendors and concessions	Legal settlements (eg. property damage recoveries)	
Building and ground leases (eg. rental spaces, concessions, retail rentals, parking rentals)	Newspaper vending commissions	Interest income	
Permits	Joint ventures (profit from capital or real estate development)	Inter-agency subsidy transactions	
Miscellaneous service fees (eg. Street closing fee, abandoned vehicle fee, tow surcharge fee etc)	Franchise fees	Reserve funds withdrawl (usually one time transactions)	
Toll revenue	Filming fees		
	Utilities (eg. the resale of electricity, water, steam, and other fuels to tenants, based on consumption levels)		

Table 5 shows the different ways that these agencies generated revenue apart from farebox revenue. The different individual revenue streams were put into four columns, (1) agency provided services for the public; (2) agency provided services for the private sector; (3) internal revenue streams; and (4) revenues that were only used by TransLink.

TransLink's individual revenue streams have been separated from the rest of the agencies as TransLink is a statutory authority and is able to enact legislation on behalf of the Province of British Columbia in Canada. This is not the case for most of the agencies on the list.

Some of the unique ways that agencies generate revenue are:

- *Joint ventures:* this is used by different agencies including the Washington Metropolitan Transportation Authority (WMATA), where the agency sells, leases, and engages in joint ventures with private developers through its Joint Development Program, with the objective of maximizing the benefits of transit-oriented development [xvii]
- *Inter-agency subsidy transactions,* refers to when there are multiple transit agencies under one transport authority, or the agencies are somehow linked, and there is an exchange of funds between them. Some agencies that service the same area also have policies that dictate how to allocate to one another accordingly.
- *Replacement tax*, this is used by TransLink specifically. This tax is levied on the taxable value of land and improvements in the transportation service region. [xviii]

Table 6: Individual Revenue Streams: Provincial/State – Taxes

Provincial/State - Taxes			
Vehicle and gas-related	**Sales Taxes**	**Property-related**	**Other**
Business privilege tax	Retail sales tax	Real property transfer tax	Payroll and self-employment tax
Diesel fuel excise tax	Diesel fuel sales tax	Mortgage recording tax	Commuter transportation mobility tax
Vehicle registration fees	Dedicated sales tax	Property taxes	
Drivers license fees	Excise tax (on specific goods or services like guel, tobacco and alcohol)	Dedicated local assessment	
Motor vehicle sales tax			
Ride-hailing fee			
Taxicab tax			
Auto rental tax			
Clean energy initiatives (eg. California Air Resources Board's Low Carbon Fuel Standard Program)			

Table 6 taxes the information from the first table, Table 4, and expands on the Provincial/State - Taxes stream. This revenue stream had many items and therefore has been split into 4 columns, (1) vehicle and gas-related taxes; (2) sales taxes; (3) property-related taxes; and (4) other.

Some of the different ways that provinces and states get operational support from taxes are:

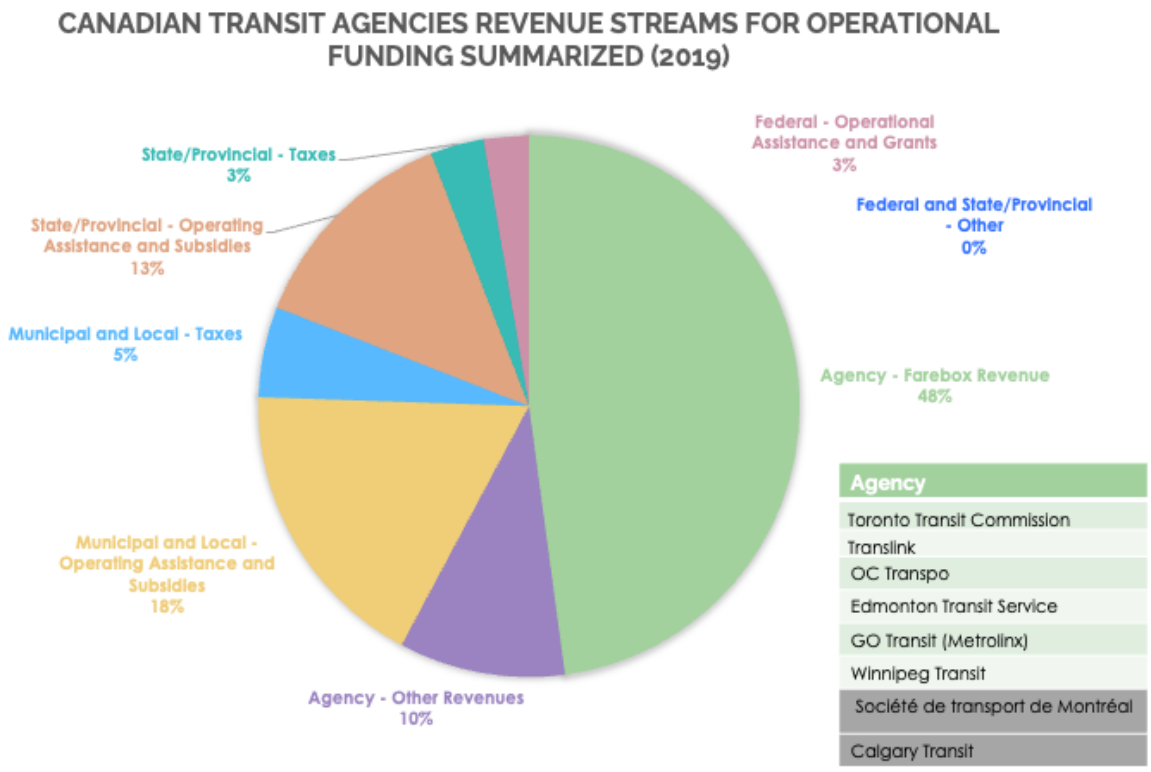
- *Dedicated Local Assessment*, used by the MBTA, is a tax to pay for improvements (such as sewers and sidewalks) in a designated area, levied on property owners who will benefit from the improvements) [xix]
- *Clean energy initiatives,* several agencies use these, and are not specific to state or provincial-level government. A state-level example is the Low Carbon Fuel Standard Program, a state program administered by the California Air Resources Board (CARB). The purpose of the program is to move state energy production toward less carbon-intensive fuel sources. Under CARB's fixed guideway regulations, which became effective in 2016, electric railroad operators such as BART are permitted to generate and sell credits to producers of higher-carbon-intensity fuels for the purpose of meeting their program compliance obligations. [xx]
- *Ride-hailing fees*, this too is used by several agencies like the City of Chicago, who has been experimenting with a congestion tax on ride-hailing vehicles since as early as 2015. As of 2019, the ride-hailing fee has been increased once more, and a portion will be dedicated to the CTA's bus operations. [xxi]
- *Payroll and self-employment tax,* started in 2018 by TriMet, where one-tenth of 1 percent (or 0.001), must be withheld from the wages of Oregon residents — regardless of where the work is performed — as well as non-residents performing services in Oregon[xxii]

The following subsection will look at the differences of transportation funding between the Canadian and U.S. agencies.

Canada vs U.S. Agencies

Using the data presented in the previous section, the following figures were created. Figure 2 shows Canadian transit agencies and the breakdown of revenue streams for operational funding, and Figure 3 shows the same for the U.S. agencies.

Figure 2: Canadian Transit Agencies Revenue Streams for Operational Funding



In Figure 2, the revenue streams from all the Canadian transit agencies reviewed (presented in green) were put together. This shows that the largest stream of operational funding among Canadian transit agencies on average is agency-generated farebox revenue at 48%. The second largest is municipal and local operating assistance and subsidies at 18%. Most agencies operate as a part of municipal governments in Canada, and the agencies that cover a larger service area usually receive operating assistance from the municipalities and towns in its service area. When looking at all the agency-generated revenue, it takes an average of 58% of operating funding, and the rest is a mix of funding from the 3 different levels of government. There are no revenue streams that fall under the Federal and State/Provincial – Other stream, as this was seen only in a few U.S. agencies. Nonetheless, the federal government gives much less operational support compared to the other levels of government, with the municipal and local-levels of government shouldering the most support to transit agencies.

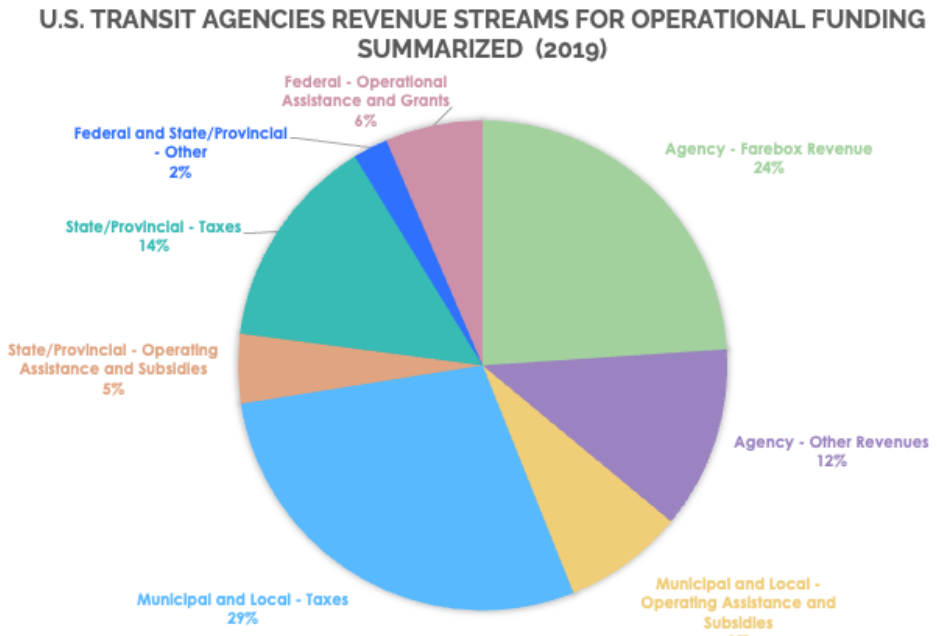
Exceptions

Canadian transit agencies are most often operated as part of the municipal government. The three exceptions to this on the list are the Société de transport de Montréal (STM), TransLink, and GO Transit. These three also operate in the largest cities in Canada, Montreal, Vancouver, and Toronto, respectively. The STM is the transit agency that operates in the agglomeration of Montreal in Quebec. The STM shares its responsibilities with the ARTM, the regional

transportation authority that oversees the STM and 3 other agencies. The STM is responsible for day-to-day operations such as operational planning, customer service, and service delivery, whereas the ARTM oversees long-term strategic planning and finances.[xxiii] TransLink is the regional transportation agency responsible for Metro Vancouver in British Columbia. TransLink is a statutory authority and can enact legislation on behalf of the Province of British Columbia. TransLink operates several modes of transport including the Skytrain an automated rapid transit system, a bus network, a commuter railway (West Coast Express), the SeaBus and its paratransit service (HandyDART). TransLink also participates in regional transportation network planning, similar to GO Transit's parent agency, Metrolinx.[xxiv] GO Transit is a commuter rail that operates in the Greater Toronto and Hamilton Area. GO Transit is operated by Metrolinx which is a crown corporation under the Province of Ontario. Metrolinx also participates in regional transportation planning and operates the airport rail link (UP Express), and the PRESTO contactless smart card automated fare collection system that is used throughout the Province of Ontario.[xxv]

The other agencies on the list are the Toronto Transit Commission, Calgary Transit, OC Transpo, Edmonton Transit Service, and Winnipeg Transit, which all operate as agencies under or part of the municipal government in which they service. Their budgets are usually tied to municipal budgets and decided with oversight through the Mayor's and City Councillor's Offices.

Figure 3: U.S. Transit Agencies Revenue Streams for Operational Funding



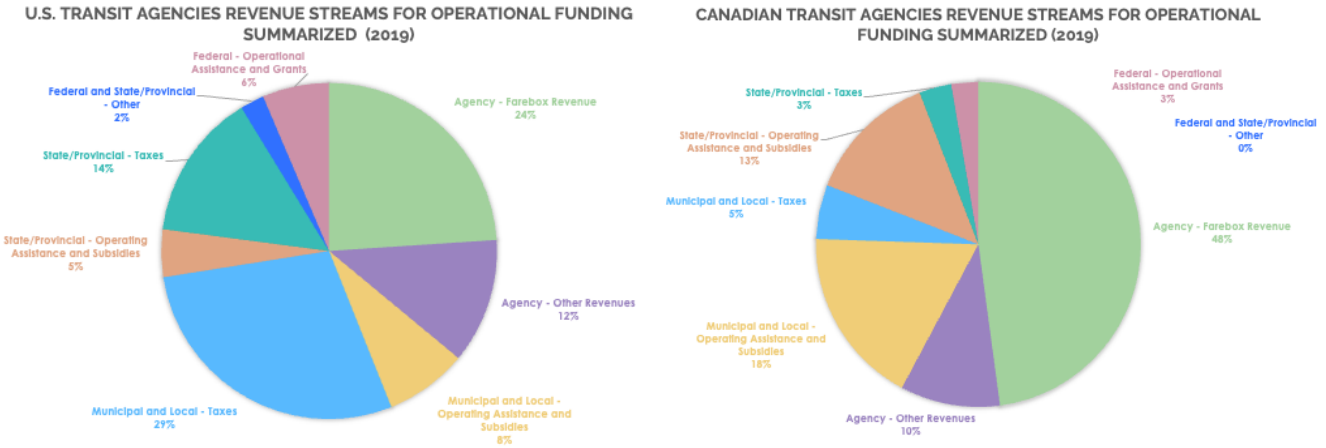
Agency
MTA New York City Transit
Chicago Transit Authority
Los Angeles County Metropolitan Transportation Authority
Massachusetts Bay Transportation Authority
Washington Metropolitan Area Transit Authority
Southeastern Pennsylvania Transportation Authority
New Jersey Transit Corporation
City and County of San Francisco
MTA Bus Company
San Francisco Bay Area Rapid Transit District
King County Department of Metro Transit
Metropolitan Atlanta Rapid Transit Authority
Denver Regional Transportation District
Tri-County Metropolitan Transportation District of Oregon
Metropolitan Transit Authority of Harris County, Texas
San Diego Metropolitan Transit System
Metro Transit
Dallas Area Rapid Transit
Regional Transportation Commission of Southern Nevada
MTA Long Island Rail Road
MTA Metro-North Railroad

Figure 3 shows the revenue streams from all the U.S. transit agencies reviewed (presented in green) summarized together. This indicates that the largest stream of operational funding on average is municipal and local taxes at 29%, followed by farebox revenue at 24%. When looking at all agency-generated revenue, there is an average of 36%, which is just over a third of the operational funding on average. The majority of the funding arises from agency-generated revenue as well as municipal and local support in the form of taxes or subsidies. The least level of support is seen from the federal level, which only covers 6-8% of the operational budget on average.

Unlike Canadian agencies, the U.S. transit agencies have a large variety of governance structures and most do not necessarily span municipal boundaries. Many of them service several different jurisdictional areas, which can span different municipalities, localities, counties, and cross state boundaries. For example, the MTA agencies in New York service New York City, Newark in New Jersey and some counties in Connecticut, and the Los Angeles County Metropolitan Transportation Authority (LACMTA) services L.A., Long Beach and Anaheim. Several of the agencies on the list are also commuter railways, including the San Francisco Bay Area Rapid Transit District (BART), which connects various cities in the Bay Area including San Francisco and Oakland, and the Dallas Area Rapid Transit in Texas, which services Dallas-Fort Worth-Arlington. In Table 1, there is a list of the service area of all 30 agencies.

These U.S. transit agencies can be operated as independent governmental agencies. Sometimes there are regional transportation authorities that oversee them, like the Chicago Transit Authority (CTA) which is overseen by the Regional Transportation Authority. Other times, agencies like the LACMTA are the regional transportation planning agency, while also operating in the transit agency capacity. The MTA in New York is a parent company to four agencies on the list of 30 agencies reviewed in this document, including: MTA New York City Transit (bus & subway), MTA Bus Company (regional bus), MTA Metro-North Railroad, and MTA Long Island Rail Road (both commuter rails). The MTA operates under New York State, however the MTA New York City Transit, the largest and busiest transit system in North America, and an affiliate of the MTA, is only partially owned by the MTA. The MTA owns the buses, and the City of New York owns the NYC Subway. With such diversity in governance structures, it's difficult to categorize U.S. transit agencies under one general model.

Figure 4: Comparison of U.S. and Canada Revenue Streams for Transit Operational Funding



Looking at both U.S. and Canadian transit agencies in comparison with one another, it appears it is more common to use municipal and local taxes to subsidize public transit in the U.S., whereas in Canada operating assistance and subsidies are allocated at the municipal and local government levels. This similarity is seen again at the provincial and state level, where Canadian provinces allocate funding based on operating assistance and subsidies, whereas US agencies receive funding from State-level taxes.

Canadian agencies have a larger share of agency-generated revenue compared to the U.S., however there were many more U.S. agencies reviewed, mainly due to higher ridership counts and possibly larger service areas, which

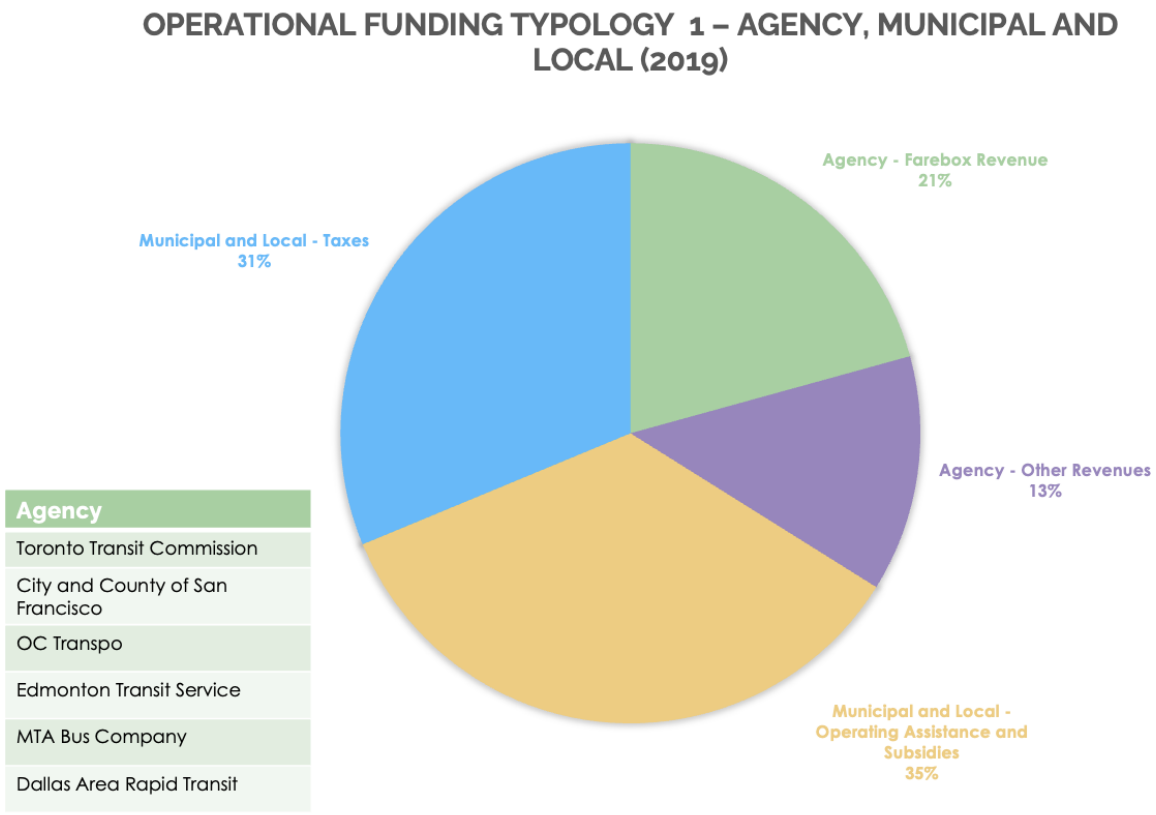
could have affected the results. As previously mentioned, each agency in Canada and the U.S. has a very different mix of revenue streams for operational funding.

The following subsection will look at the different operational funding typologies that were present in the 30 agencies.

Operational Funding Typologies

This subsection looks at the different types of funding typologies that arose from looking at which agencies used which of the streamlined revenue streams. Out of the 30 agencies, six typologies were present, and will be explored further below. These six typologies were (1) agency, municipal and local streams; (2) agency, municipal, local, and state/provincial streams; (3) agency and state/provincial; (4) agency, municipal, local and federal; (5) agency, state/provincial and federal; (6) agency, municipal, local, state/provincial, and federal.

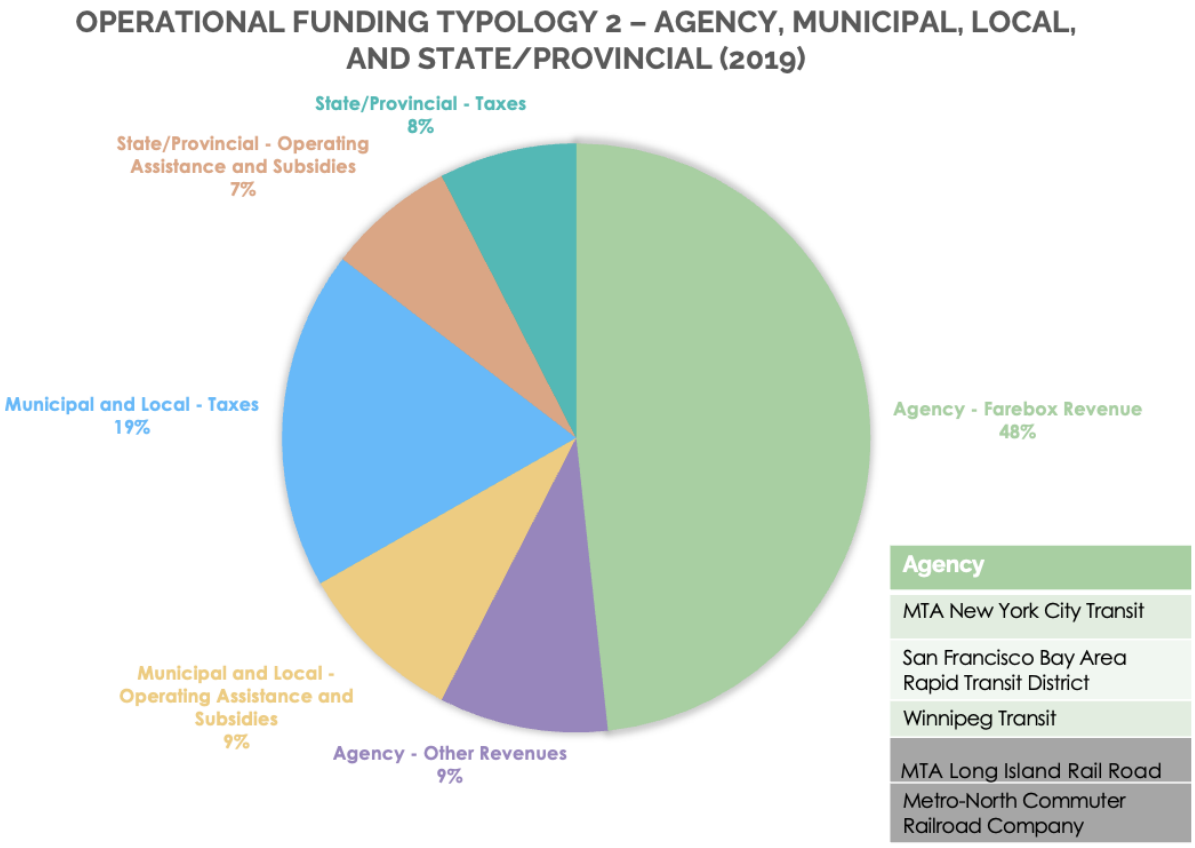
Figure 5: Operational Funding Typology 1



The first operational funding typology includes funding streams gained from agency-generated revenues and funding support from the municipal and local governments, including counties and towns. The largest stream of funding for these agencies is municipal and local-level operating assistance and subsidies at 35%, but only marginally. These municipal and local-level governments often allocate an amount under operating assistance to support the transit systems in their areas. The second largest is taxes at the municipal and local-level at 31%. This can include dedicated transit taxes, or a portion of an existing tax that goes towards transit. The agencies that use this funding style are the Toronto Transit Commission (TTC), the société de transport de Montréal (STM), OC Transpo in

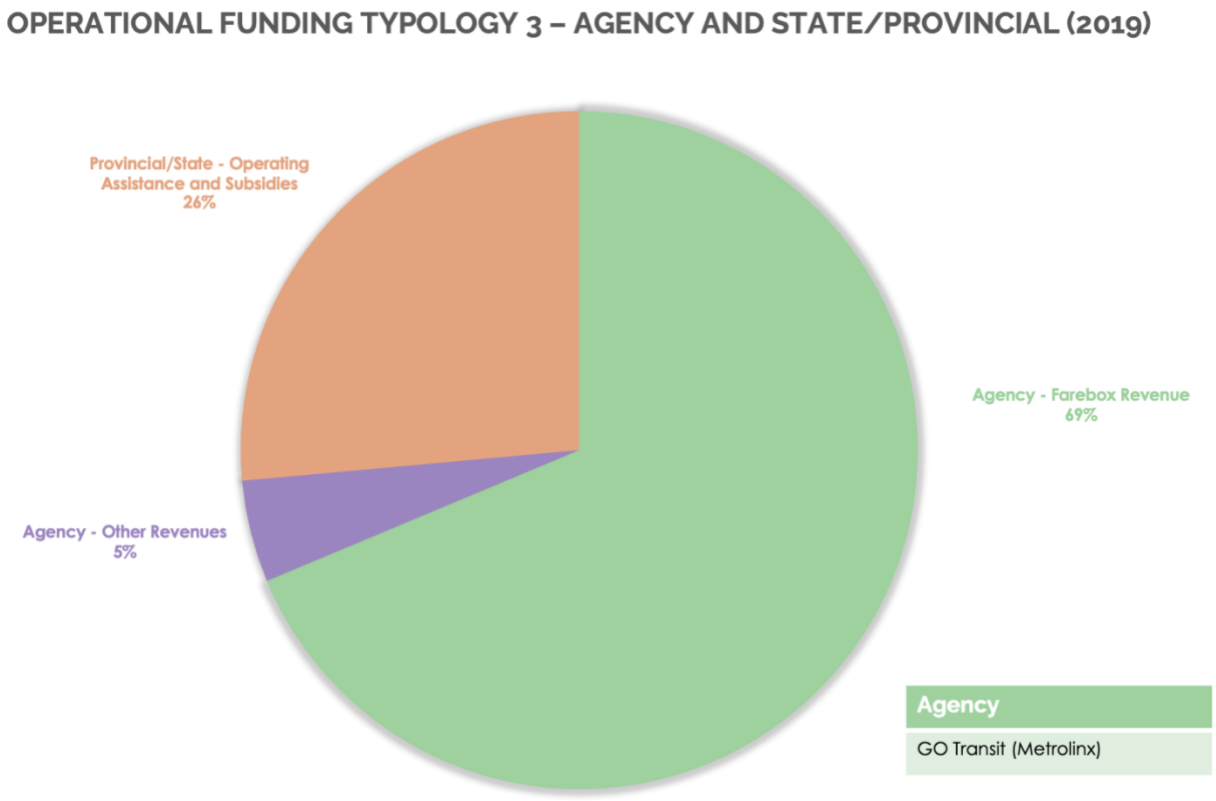
Ottawa, Edmonton Transit Service as well as the City and County of San Francisco (MUNI), MTA Bus Company, and Dallas Area Rapid Transit (DART).

Figure 6: Operational Funding Typology 2



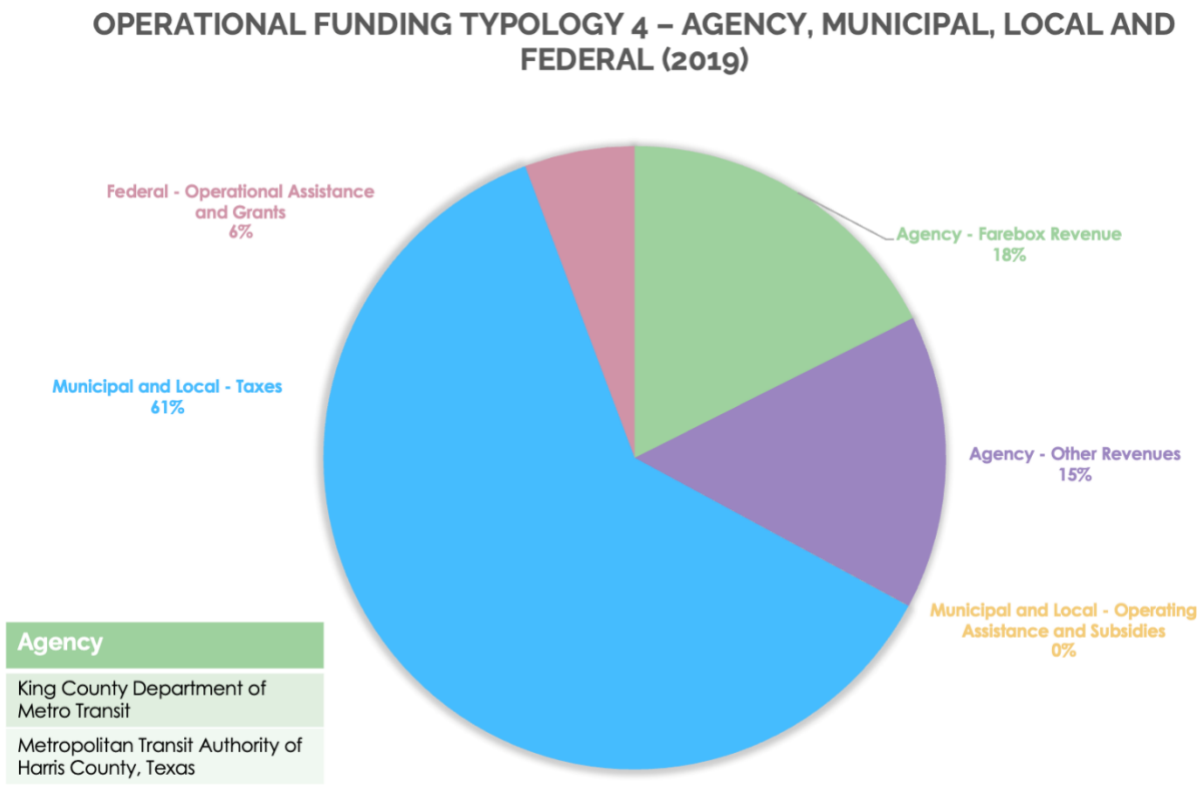
The second funding typology consists of agency-generated revenue, funding from municipal and local levels of government, including counties and towns, and funding from state or provincial-level governments. The largest stream of funding for these agencies is agency farebox revenue at 48%. This is the second largest share of farebox revenue compared to all the other funding typologies. Farebox revenue includes revenue from bus, train, tram, and all other passenger fares. Looking at all of the agency-generated revenue together, this covering more than half, at 57% of the funding on average. The second largest revenue stream is from municipal and local-level taxes, at 19%. Aside from agency-generated revenue, the municipal and local-level funding makes up 28% of funding on average, and provincial level funding makes up 15%. The agencies that use this funding style are MTA New York City Transit, San Francisco Bay Area Rapid Transit District (BART), MTA Long Island Rail Road, MTA Metro-North Railroad and Winnipeg Transit.

Figure 7: Operational Funding Typology 3



The third funding typology consists of agency-generated revenue and funding from state or provincial level governments. There is only one agency in this funding style from the list of 30 agencies reviewed, which is GO Transit. GO Transit is operated by Metrolinx, which is a crown agency under the Province of Ontario in Canada. Metrolinx manages road and public transport and oversees the regional transportation plan for the Greater Toronto and Hamilton Area. GO Transit operations is largely funded through agency-generated revenue, with farebox revenue providing 69% of the budget in 2019 and other revenues providing 5% of the operational budget. Together agency-generated revenue covered 74% of the 2019 operational budget. The rest (26%) was received as an operational subsidy from the Province of Ontario.[xxvi]

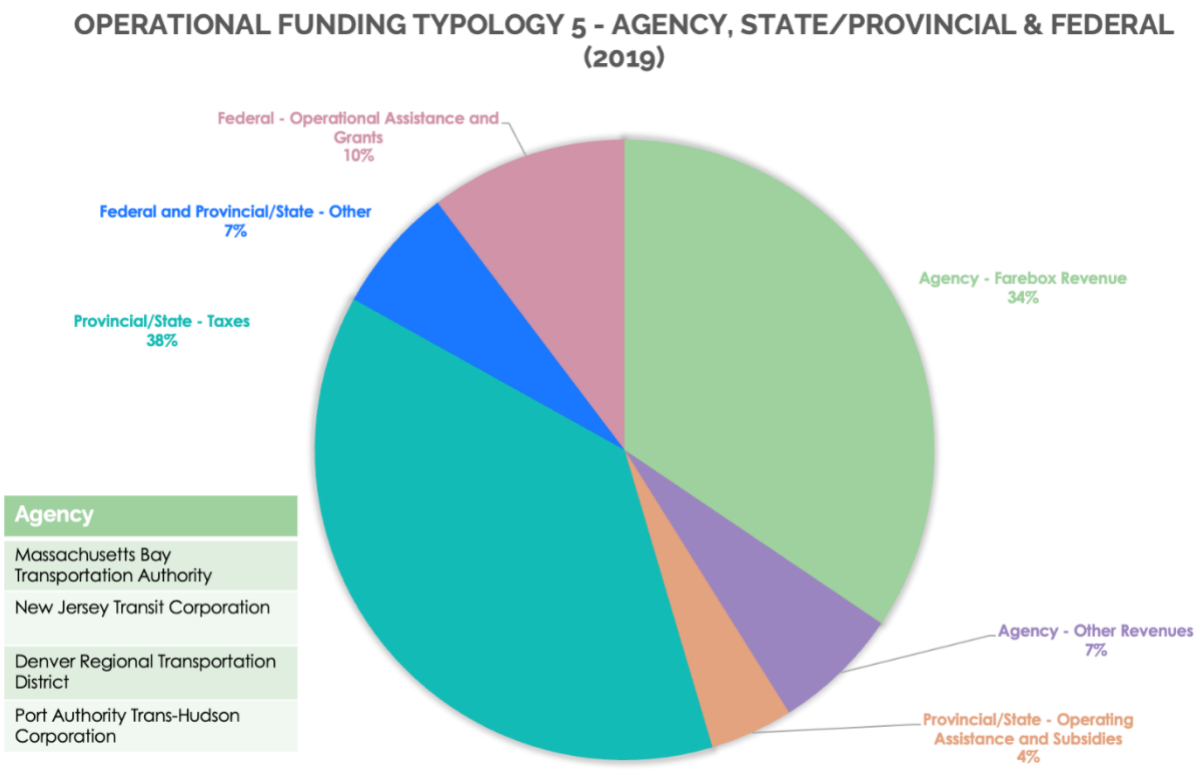
Figure 8: Operational Funding Typology 4



The fourth funding typology consists of agency-generated revenue, funding from municipal and local levels of government and funding from federal-level governments. The largest stream of funding for these agencies is municipal and local-level taxes at 61%. This can include dedicated transit taxes, or a portion of a tax that goes towards transit. To note, there is no operating assistance and subsidies at the municipal and local-level compared to the high portion of municipal and local tax revenue from these two agencies. The second largest stream is farebox revenue, at 18%, followed closely by other agency-generated revenue, at 15%. Other revenues can include revenue from advertising, franchise fees, parking fees and more. A full list can be found on Table 5 in the previous subsection. Altogether, agency-generated revenue makes up an average of 33% of the operating budget with this funding style, which is still a large portion of the budget, and federal funding covers an average of 6%.

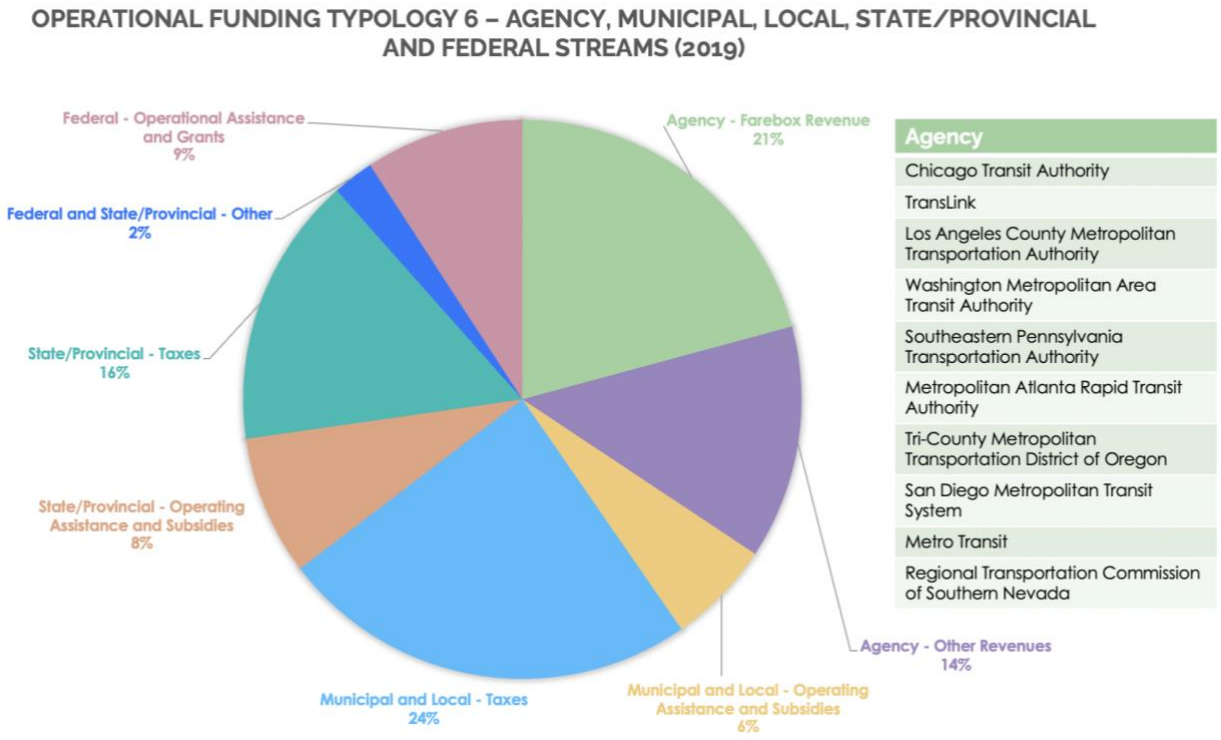
The agencies that use this funding style are King County Department of Metro Transit which services the Seattle, WA area and the Metropolitan Transit Authority of Harris County, Texas which services the Houston, Texas area.

Figure 9: Operational Funding Typology 5



The fifth funding typology consists of agency-generated revenue, funding from state or provincial level governments and federal funding. The largest stream of funding for these agencies is provincial or state-level taxes at 38%, followed closely by farebox revenue at 34%. All of the funding from the state accounts for an average of 42%, almost half the average budget. With agency-generated revenue added together, it becomes the second largest stream of funding, at an average of 41%. Lastly, the rest is made up of federal-level support, at 10-17%. The agencies that use the largest revenue stream of federal funding in this funding style are Massachusetts Bay Transportation Authority, New Jersey Transit Corporation, Denver Regional Transportation District, and the Port Authority of Trans-Hudson Corporation.

Figure 10: Operational Funding Typology 6



The sixth and last operational funding typology that was found in these 30 agencies consists of agency-generated revenue, funding from municipal and local levels of government, funding from state or provincial level governments and federal funding. This was the most common funding style seen among the 30 agencies, with 10 agencies that use it. The largest stream of funding for these agencies is municipal and local taxes at 24%, closely followed by farebox revenue at 21%. The third largest revenue stream is other revenue generated by the transit agencies at 14%. When looking at agency-generated revenue together, it would be the largest share of funding among the different levels of governance, averaging at 35%. There is a much more even spread between the eight revenue streams, possibly due to the number of agencies that are present in using this funding typology. Federal-level funding remains the lowest among governance levels, and municipal and agency level remains the highest.

The agencies that use this funding style are Chicago Transit Authority, TransLink which services the Greater Vancouver Area in B.C., Canada, Los Angeles County Metropolitan Transportation Authority, Washington Metropolitan Area Transit Authority, Southeastern Pennsylvania Transportation Authority, Metropolitan Atlanta Rapid Transit Authority, Tri-County Metropolitan Transportation District of Oregon, San Diego Metropolitan Transit System, Metro Transit which services Minneapolis-St. Paul in the US, and Regional Transportation Commission of Southern Nevada.

Out of the 30 agencies that were reviewed, these 6 funding typologies were extracted from the different individual streams of funding. This is not an exhaustive list, as there are many different ways to fund public transit. In fact, each agency presented above has their own funding formulas. Some agencies, may be more dependent on one stream of funding, as seen in funding typology 2 and 3, where there are major dependencies on farebox revenue to support the operations of the agencies, or typology 4, where there are major dependencies on municipal and local-level taxes (including at the county and town level) to support operations. In instances of major crisis, like an economic

downturn, or a public health pandemic like we are currently experiencing, agencies that are heavily dependent on one funding stream may find themselves more at risk than others. This will be further explored in the next sections.

Impacts of COVID-19

In this section, the impacts of the COVID-19 pandemic on transit operations and operational funding will be examined. The subsections will give a background on the COVID-19 pandemic, and its impact on transit, then move on to discuss the emergency federal transit injections.

COVID-19 Context

The novel COVID-19 virus was declared a global pandemic by the WHO on March 11, 2020. Due to the COVID-19 pandemic and the stay-at-home orders, there was a major drop in public transit ridership, and transit agencies had to adjust accordingly through various methods such as cutting service, running service at a loss, and asking for increased funding from all levels of government. Governments and transit agencies will need to consider alternate, on-going, and sustainable forms of funding as the pandemic continues, so agencies can uphold a system that can sustain its current operational costs and make improvements to better service its residents.

At the beginning of the pandemic, after COVID-19 was discovered to be an airborne, human transmittable disease, many countries around the world started instating lockdowns and stay-at-home orders to their citizens, urging them to avoid non-essential travel, closing businesses, and asking citizens to only go outside for essential goods or exercise. Many cities slowed down to a halt, with videos of empty roads and public spaces populating social media platforms. Workers that could were asked to work from home, while others lost their jobs as businesses closed and reduced their hours due to the stay-at-home orders. Workers that had in-person jobs, like medical staff, grocery store staff, and manufacturing employees, were deemed essential workers and continued to work via various forms of transportation, including public transit, with new COVID-19 precautions.

With a large portion of the population staying at home, public transit saw a rapid drop in ridership, and transit agencies scrambled to adjust their schedules to the new ridership demands. Transit agencies that depend largely on farebox revenue to fund their operational costs ran service at a huge loss, many citing empty buses and trains, during this time. This resulted in agencies cutting service, frequency, and capacity, making rapid service changes to make up for the loss in revenue.[xxvii] During this time, there were many fears that COVID-19 could be caught on public transit, with the enclosed space of transit vehicles, and proximity of other riders. Transit agencies invested in heightened cleaning procedures for the vehicles and train cars, as well as shields, masks, and sanitizing gear for their drivers.[xxviii] Agencies also established protocols, following CDC guidelines[xxix], that riders needed to wear a mask on public transit and maintain social distancing (staying 6 feet away from others) where possible.

As the pandemic has continued into 2021, there has been good and bad news. Vaccines are readily available to residents of Canada and the United States (U.S.), however there are new variants[xxx] that threaten the return to peace. The U.S. and Canadian governments at the federal level have respectively provided emergency operational funding to public transit agencies to help them stay afloat across the countries.

Emergency Transit Funding Support

Due to the COVID-19 pandemic, there were major financial impacts on transit agencies across Canada and the U.S. Agencies sought external funding as ridership and farebox revenue dropped and enhanced cleaning and safety was needed on transit. At the federal level, both Canadian and U.S. governments came out with emergency stimulus funding agreements that would support its health services and lead the recovery of the country's economy.

The U.S. Congress passed the Coronavirus Aid, Relief, and Economic Security Act in March of 2020, and Canada's Safe Restart Agreement was announced in July 2020.

The Safe Restart Agreement in Canada

The Safe Restart Agreement, or SRA, announced in July 2020, focuses on the safe restart of the provincial and territorial economies, and aims to support resiliency of provinces/territories, their cities, and their economies to possible future waves of COVID-19. This is done through emergency funding for several key areas: testing; contact tracing and data management; health care system capacity; vulnerable populations; municipalities; personal protective equipment for health and non-health workers; childcare for returning workers; and pan-Canada sick leave. At the federal level, the Government of Canada through the SRA would be investing more than $19 billion to these areas.

Within the priority of supporting municipalities, public transit was specifically highlighted as a key component. Municipalities would be receiving up to $2 billion to support COVID-19 operating costs, which can include transit, for the next six to eight months. This portion of the SRA is an intergovernmental partnership, where the contributions that the provinces and territories had made due to the COVID-19 pandemic as of April 1, 2020, would be cost-matched by the federal government, and the provinces and territories were expected to do the same to federal-level funding. An additional $2.3 billion at the federal-level would be cost-matched to support any contributions that had been made by provinces and territories to public transit. [xxxi]

Logistically, each province oversaw dispersing the emergency funds to their respective municipalities, and funding from the SRA was different depending on the province involved.[xxxii] [xxxiii] These funds would be available to municipalities and agencies on an as-needed basis, so agencies would need to prove that they needed additional funding support. The amounts eligible and amounts received were not provided at the national level, so only the agencies that provided their numbers were included in the below table. Further rounds of funding have also been made available to transit agencies, however the exact dates and amounts were not readily available for all agencies.

The Coronavirus Aid, Relief, and Economic Security Act in the U.S.

The Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, was created in March 2020 in response to the COVID-19 pandemic. The CARES Act is a stimulus bill that provided fast and direct economic assistance for American workers, families, small businesses, and industries.[xxxiv] The CARES Act implemented a variety of assistance programs, including assistance for American families and workers, small businesses, American industry, and for State, Local, and Tribal governments. Transit agencies are included in the last section and had received an allocation of $25 billion to recipients of urbanized and rural area formula funds, with $22.7 billion to large and small urban areas and $2.2 billion to rural areas.[xxxv]

Unlike the SRA in Canada, funding was provided at a 100% federal share, with no local match required, and would be available to support capital, operating, and other expenses generally eligible under those programs to prevent, prepare for, and respond to COVID-19.[xxxvi] Operating expenses incurred beginning on January 20, 2020 and ending on December 31, 2020 for all rural and urban recipients, even those in large urban areas, are also eligible, including operating expenses to maintain transit services as well as paying for administrative leave for transit personnel due to reduced operations during an emergency.

Logistically, the CARES Act funds were distributed down from the federal-level, and lower-level governments created their own apportionments. At the federal level, the allocations were decided by the FTA apportionments that matched the Urbanized Area Formula Grant Funds (Section 5307) and Rural Area Formula Grant Funds (Section 5311), which are pre-established legislative formulas based on a combination of bus revenue vehicle miles, bus passenger miles, fixed guideway revenue vehicle miles, fixed guideway route miles, population and population density. [xxxvii] Agencies needed to submit proof of their expenditures and revenue loss due to COVID-19 to be reimbursed up until the pre-determined apportionments (amount eligible in Table 7).

Second and third round funding has been released to cover the impacts of COVID-19 to the upcoming years. The Coronavirus Response & Relief Supplemental Appropriations (CRRSA) Act was signed into law in December 2020, followed by the American Rescue Plan in March 2021. The apportionments for these legislations follow in the steps of the CARES Act and are distributed by the FTA apportionments that matched the Urbanized Area Formula Grant Funds (Section 5307) and Rural Area Formula Grant Funds (Section 5311). Agencies are expected to continue to demonstrate need for these additional funds due to COVID-19 impacts before they receive funding.

Table 7: Emergency Funding Phase 1

FEDERAL FUNDING PHASE 1					
Agency	Service Area	Province/State	Country	Funding Program	Amount Eligible
Toronto Transit Commission	Toronto	ON	CA	Safe Restart Agreement	$404,088,232.00
Chicago Transit Authority	Chicago	IL-IN	US	CARES Act	$817,487,351.00
TransLink	Greater Vancouver Area	BC	CA	Safe Restart Agreement	$644,000,000.00
Los Angeles County Metropolitan Transportation Authority	Los Angeles-Long Beach-Anaheim	CA	US	CARES Act	$861,910,265.00
Massachusetts Bay Transportation Authority	Boston	MA-NH-RI	US	CARES Act	$827,698,900.00
Washington Metropolitan Area Transit Authority	Washington	DC-VA-MD	US	CARES Act	$876,806,108.00
Southeastern Pennsylvania Transportation Authority	Philadelphia	PA-NJ-DE-MD	US	CARES Act	$644,313,203.00
New Jersey Transit Corporation	New York-Newark	NY-NJ-CT	US	CARES Act	$1,423,544,405.00
City and County of San Francisco	San Francisco-Oakland	CA	US	CARES Act	$373,782,759.00
Calgary Transit	Calgary	AB	CA	Safe Restart Agreement	$72,311,409.00
OC Transpo	Ottawa	ON	CA	Safe Restart Agreement	$74,980,842.00
Edmonton Transit Service	Edmonton	AB	CA	Safe Restart Agreement	$59,727,198.00
San Francisco Bay Area Rapid Transit District	San Francisco-Oakland	CA	US	CARES Act	$377,053,455.00
King County Department of Metro Transit	Seattle	WA	US	CARES Act	$243,712,053.00
Metropolitan Atlanta Rapid Transit Authority	Atlanta	GA	US	CARES Act	$298,641,024.00
Denver Regional Transportation District	Denver-Aurora	CO	US	CARES Act	$232,253,946.00
Tri-County Metropolitan Transportation District of Oregon	Portland	OR-WA	US	CARES Act	$184,924,979.00
Port Authority Trans-Hudson Corporation	New York-Newark	NY-NJ-CT	US	N/A	N/A
Metropolitan Transit Authority of Harris County, Texas	Houston	TX	US	CARES Act	$248,835,226.00
San Diego Metropolitan Transit System	San Diego	CA	US	CARES Act	$219,987,291.00
GO Transit (Metrolinx)	Greater Toronto and Hamilton Area	ON	CA	N/A	N/A
Metro Transit	Minneapolis-St. Paul	MN-WI	US	CARES Act	$226,499,058.00
Winnipeg Transit	Winnipeg	MB	CA	Safe Restart Agreement	$32,300,000.00
Dallas Area Rapid Transit	Dallas-Fort Worth-Arlington	TX	US	CARES Act	$229,627,520.00
Regional Transportation Commission of Southern Nevada	Las Vegas-Henderson	NV	US	CARES Act	$112,263,863.00
Metropolitan Transportation Authority (MTA)**	New York-Newark	NY-NJ-CT	US	CARES Act	$4,009,469,417.00

Table 7 shows the list of the 30 agencies from the previous section, and the amounts they were eligible for in the first round of emergency federal funding, with a few minor changes. The Metropolitan Transportation Authority (MTA) in New York is the transport authority that is in charge of four agencies that previously appeared in prior tables, the MTA New York City Transit, the MTA Bus Company, the MTA Long Island Rail Road, and the Metro-North Commuter Railroad Company. The CARES Act was allocated down to the MTA level, and then dispersed within the authority to its subsidiaries. The specific amounts received for each organization was not available, so the amount eligible for the entire MTA was included instead, in the bottom row. This amount most likely also contains allotments for the MTA's non-transit operations, such as tolls, bridges and tunnels. The société de transport de Montréal (STM)'s eligible amount was not reported by the STM or the regional authority the Autorité régionale de transport métropolitain (ARTM) and was not included in Table 7.

Table 7 also shows two agencies that did not receive federal stimulus funding. The first is the Port Authority Trans-Hudson Corporation where there was no amount on federal databases nor information on news sites on any amounts allocated to the Port Authority under the CARES Act. The second is GO Transit, which is operated by

Metrolinx, a crown corporation under the Province of Ontario. As the SRA was only allocating funds for municipalities, and municipal operations, GO Transit, as a provincial agency, was not eligible for funding. Instead, GO Transit's parent organization, Metrolinx received a larger share of provincial operating subsidy, approximately $961.6 million, which was an increase of about $371.2 million or 62.9% from $590.4 million in the 2019-20 fiscal year, to make up for the gap left due to lower ridership and fares from the COVID-19 pandemic. This increase was offset by reductions in capital adjustments in the fiscal year of 2020-21 and was needed to uphold the commitments made under the Regional Transportation Plan. [xxxviii]

TransLink also had a slightly different funding agreement through the SRA. They were provided $600 million in one-time funding to cover expected operational losses in 2020 and 2021 caused by the COVID-19 pandemic, and $44 million to ensure that TransLink would limit average annual fare increases to 2.3% until the end of 2024. [xxxix] [xl]

In addition to SRA funding, some Canadian transit agencies also received additional provincial subsidies to support them in the COVID-19 recovery. The Province of Ontario offered support through the Municipal Transit Enhanced Cleaning (MTEC) program, for expenses incurred from April 2020 to December 2020. The TTC recorded receiving $7.4 million from the MTEC program in 2020.[xli] The Province of Quebec also provided additional funding, the STM reporting that the Province of Quebec had made $400 million available to cover up to 50% of loss of fares for all transit agencies in the province for the period of April 2020 to December 2020.[xlii] The Province of Quebec later added an additional $800 million, for a total of $1.2 billion to support transit agencies in operational losses and enhanced cleaning measures due to the COVID-19 pandemic, from April 2020 to December 31, 2022. [xliii]

Figure 11: Percentage of the 2019 Operational Budget Covered by the 2020 Federal Emergency Funding

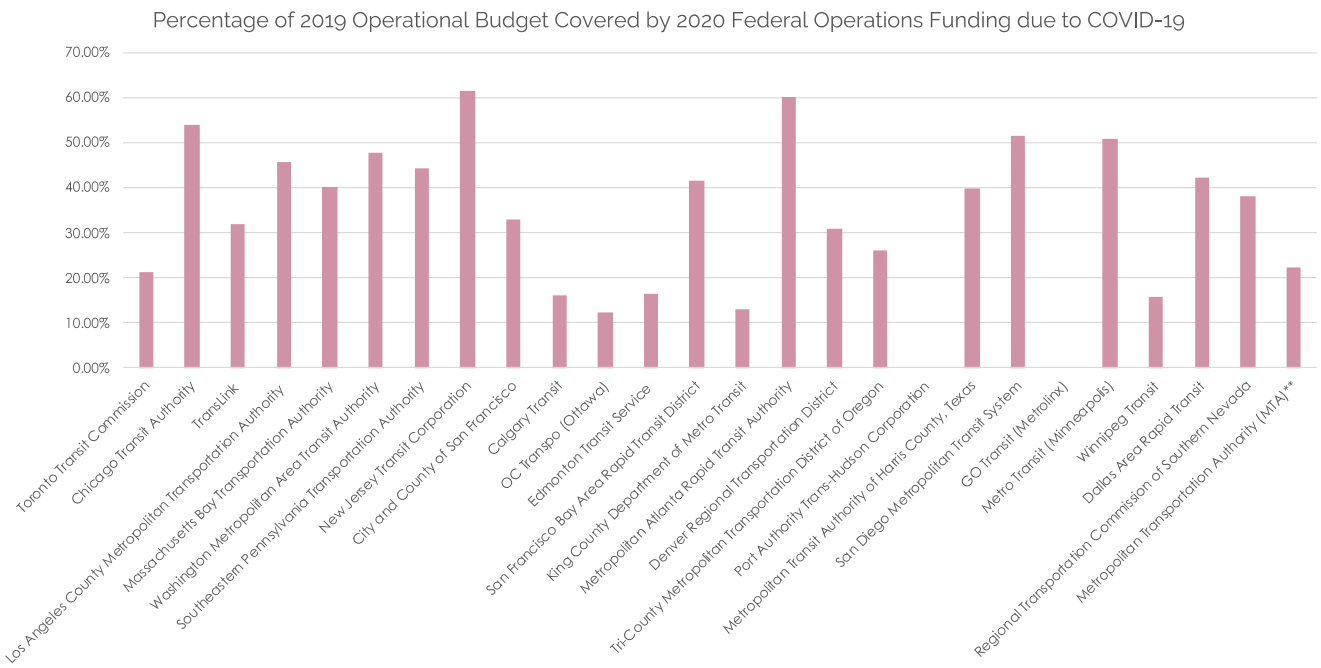


Figure 11 shows the percentage of the 2020 emergency injection of federal funding (pre-determined apportionments/amount eligible) that can cover the operational budget from 2019. The operational budget numbers were from Tables 1 and 2 in the previous section, and the amount eligible from Table 7. The MTA, who operates several different transit agencies, were merged under one agency (MTA) to match the federal apportionment amount. The MTA's operational budget number in Figure 11 is the addition of the operational

budgets of the four subsidiary agencies listed in Table 1 and 2, the MTA New York City Transit, the MTA Bus Company, the MTA Long Island Rail Road, and the Metro-North Commuter Railroad Company. This figure was created to see how much of the previous year's operational budget was being covered by federal emergency funding. On average, the federal injection can cover about 32.92% of the agency's operational budget. This is very close to the median, of 35.45%. The agencies that have the highest coverage were New Jersey Transit Corporation (61.47%), followed by the Metropolitan Atlanta Rapid Transit Authority (60.15%), and the Chicago Transit Authority (54.01%). The lowest amount of coverage was OC Transpo (12.27%), followed by King County Department of Metro Transit (12.89%), and Winnipeg Transit (15.82%). As previously stated, the Port Authority Trans-Hudson Corporation and GO Transit did not receive federal funding under the CARES Act or the SRA.

Figure 11 also shows that there is no consistency in the funding allocations. Funding was allocated on an as-needed basis for both the U.S. and Canada, and in the U.S. the apportionment amounts were pre-decided. In Canada, it appears that the provincial governments decided on the appropriate funding allocations. Compared to the operational funding typologies presented in the prior section, there is no consistency in funding allotments with agencies that use similar revenue streams to fund their operations. Overall, it appears that Canadian agencies received a smaller share overall compared to agencies in the U.S., noting that there is a smaller amount of Canadian agencies that appear on the figure.

The next section will be a discussion and analysis on trends and themes that were raised throughout the document.

Analysis

In the previous two sections, revenue streams for transit operational funding of 30 agencies were extracted and put together to highlight different operational funding typologies. Then there was some insight into the impacts of COVID-19 on transit agencies and how the federal governments of Canada and the U.S. have stepped in to support the operations of transit service across both nations. This section seeks to connect the two previous sections, what can be learned, and what can be brought forth, moving forward.

Transit Operational Funding Typologies

In the 30 agencies that were reviewed for this report, it shows that all agencies are still dependant on farebox revenue and government support for operational funding. Looking at the specific operational funding typologies, it appears that municipalities and local-level governments prefer allocating operating assistance and subsidies over dedicated tax revenue. It is also more popular with U.S. agencies to have dedicated tax revenues at local or state level support, compared to Canadian agencies who have more financial support in the form of operating assistance or subsidies. Operating assistance or subsidies requires a certain amount of support year over year. This could be a more consistent way of funding transit than taxes which may fluctuate with the economy.

Transit in the U.S. and Canada has always been partially funded by different levels of government, despite being started as a for-profit venture. Public transit is seen as an essential service, and at times is treated like a social service. Public transit remains underfunded and, in most circumstances, operates at a deficit, but this is not the case everywhere in the world. In cities like Hong Kong and London, public transit is self-sustaining, and uses agency-generated revenues to support their day-to-day operations. There are many other typologies that exist around the world that were not found in the list of 30 agencies reviewed. This could be agency and federal-level funding; agency-generated funding only; funding from municipal and local governments, state or provincial governments and federal-level government, without agency revenues; or funding from all levels of governments and agency, without farebox revenue (essentially, a "fareless system"). There are also instances where public transit is operated as a public-private partnership, where private corporations operate parts of the public transit system as a contractor of the government or transit agency. Transit can also be completely privatized and operated by private enterprises. Some examples of these different revenue mixes to fund transit operations can be found in the U.S., notably LA Metro is currently experimenting with a fareless system. There is an expectation that U.S. and Canadian transit agencies should be working towards becoming self-sustaining transit systems, despite the falling ridership in many areas even prior to the COVID-19 pandemic. Some agencies can cover a large portion of their operating expenses using agency-generated revenues, however none in the 30 reviewed were able to completely cover their operating costs alone. In fact, with agencies who were able to cover a large portion of their operating expenses with farebox revenue and other agency-generated revenue, were severely impacted by the COVID-19 pandemic.

Operational Funding During COVID-19

The COVID-19 pandemic brought about a sharp drop in ridership with social distancing guidelines and stay-at-home lockdown orders. With less people riding transit and heightened cleaning requirements, many transit agencies saw a huge decrease in their farebox revenues, and other in-person services like park and rides, vending machines, and other concessions. Agencies that had strong farebox return rates, like BART and MTA New York City Transit, saw major losses in operating revenues due to low ridership rates. Agencies that used less revenue streams, like operational typologies 1 or 3 are also more vulnerable to major shifts in the economy. In comparison, agencies that had a

diversity in revenue streams are less likely to be affected. Farebox revenue experienced a major drop due to the drop in ridership, whereas agencies that were more dependent on taxes or operating subsidies saw less of a hit to their operational budget. Looking further in depth, specific taxes experienced more of a drop than others. Agencies that were financed primarily by property or real-estate taxes saw less of a change in revenues than agencies that were more dependent on sales taxes. Agencies that depend on fuel taxes are also seeing a gradual change in revenues as electric cars become more popular. As the pandemic continues, it is possible that other streams of revenue will see a similar drop, perhaps not as drastic as farebox revenues, but will still be affected over time by the COVID-19 pandemic. This could be operational assistance and subsidies from different levels of government, depending on how their tax revenues have held up throughout the pandemic. In Canada, the SRA allocated a large sum of money to assist municipalities in their recovery. If, in the long-term, municipalities cannot support transit operations without the support of funding from higher levels of government, transit systems will surely suffer.

The Future of Transit Operational Funding

Agencies in Canada and the U.S. are continuously testing out new ways of funding transit operations, and transit in general. This includes things like Oregon's payroll and self-employment tax, which gives tax revenues to TriMet based on wages of Oregon residents and non-residents performing services in Oregon. As well, ride-hailing fees are being put forth in various places around the world, including the U.S. and Canada, with the rise in ride-hailing apps like Uber and Lyft. These fees are put into a general transportation fund, or in the case of Chicago's CTA is dedicated to transit. Other agencies like TransLink are exploring adding tolling to assist in transit funding. All of these are relevant ways to get continuous funding for transit operations, however one other major aspect of transit funding will need to be explored to fully understand the context.

Policies that surround transit, including funding agreements, service level agreements, and so forth are another major factor in transit funding. In the case of Ottawa's OC Transpo, the agency is expected to cover a certain share of the operational budget before any government subsidies or assistance. These funding agreements force agencies to grapple with difficult decisions like raising fares, or cutting service, both of which contribute greatly to the possibility of losing more ridership. With additional technological advancements like smart payment cards, which add to the overall cost of operations, transit agencies are seeing more operational expenses while funding for operations is limited.

With the COVID-19 pandemic, the federal government stepped in and injected emergency funding to sustain transit agencies in an unforeseen time of operational revenue loss, but even then, some transit agencies had to grapple with cutting service levels to be able to stay afloat. Both the Canadian and U.S. governments have provided now a second and third round of funding for transit agencies, however this is due to an extreme circumstance, and is not sustainable for the long-term. Historically, federal governments have gradually taken a smaller role in funding public transit operations, instead focusing on capital projects, so agencies know that this will most likely not be a long-term solution to budget shortages. This leaves agencies with the challenge of securing additional funding before the federal funding ends. Agencies have started mapping out best to worst case scenarios in terms of the longevity of the COVID-19 pandemic and ridership (bringing in farebox revenues), however even in the best-case scenarios there will be a slow return to transit and most likely will be lower than expected ridership and fare revenues compared to before the pandemic.

Conclusion

This report compares the different revenue streams of 30 different agencies with the highest ridership counts in U.S. and Canada. What was found is that each agency is vastly different, with various ways of funding their agency's operations that are appropriate to the political, economic, and social context that they operate in. Some agencies use a similar mix of funding streams to cover their operational budget, but no agency has the exact same circumstance. With the impacts of the COVID-19 pandemic, the resiliency of these revenue streams was tested. Agencies that were heavily dependent on farebox revenues experienced an immediate drop in revenue in line with the drop in ridership. Other agencies that were more dependent on government operating assistance or taxes may experience a gradual impact over time. Due to the huge impacts on operational funding, emergency federal assistance was authorized, however this is not a sustainable form of operational funding for the long-term. What was already difficult, securing operational funding, has now become even more of a priority for agencies as a part of the COVID-19 recovery. Governments at all levels should offer guidance and financial support as much as possible to transit agencies in this precarious time, as agencies struggle to maintain service levels while operating during a pandemic. As agencies consider what other revenue streams that are being used by their peers may be applicable to them, governments should also consider if agencies, transit authorities, or even municipal and local governments should have additional legislative power to assist in earning tax dollars to support the many public goods and services that they are responsible for.

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Appendix A: Limitations / Further Research Needed

This report was difficult to put together as every agency is very unique. An attempt was made to pull together some information in order to compare the 30 selected agencies, however as mentioned in the discussion part, there would need to be a deeper look into the different policies that agencies must abide by, and their implications on the type of service that is run. It would also be interesting to see if agencies were forced into diversifying their revenue streams due to lack of funding. It could also be helpful to investigate the goals of different cities, states, and local governments to see what their priorities are when it comes to public goods and services like transit. It will also be important to keep a close eye on the COVID-19 recovery process of all transit agencies. Many agencies prior to the COVID-19 pandemic were already facing precarious situations and may not recover without proper support from all levels of government. The pandemic may change how transit in general is funded moving forward

Appendix B: Tables

Agency	Municipality	Province/State	Country	Operational Budget	Capital Budget	Total Budget	Measured Against
MTA New York City Transit	New York-Newark	NY-NJ-CT	US	$12,905,158,000.00	*$3,774,500,000.00*	$16,679,658,000.00	Total Budget
Toronto Transit Commission	Toronto	ON	CA	$1,911,000,000.00	$1,883,500,000.00	*$3,794,500,000.00*	Operational Budget
Société de transport de Montréal	Montréal	QC	CA	$1,310,998,000.00	$149,902,000.00	$1,460,900,000.00	Total Budget
Chicago Transit Authority	Chicago	IL-IN	US	$1,513,636,343.00	$425,147,627	*$1,938,783,970.00*	Operational Budget
TransLink	Metro Vancouver Area	BC	CA	$2,013,786,000.00	$619,818,000.00	*$2,633,604,000.00*	Operational Budget
Los Angeles County Metropolitan Transportation Authority	Los Angeles-Long Beach-Anaheim	CA	US	*$1,888,300,000.00*	*$1,669,746,773.00*	$6,610,700,000.00	Total Budget
Massachusetts Bay Transportation Authority	Boston	MA-NH-RI	US	$2,057,300,000.00	*$1,065,450,453*	*$3,122,750,453.00*	Operational Budget
Washington Metropolitan Area Transit Authority	Washington	DC-VA-MD	US	$1,837,843,000.00	$1,279,000,000.00	$3,116,843,000.00	Operational Budget
Southeastern Pennsylvania Transportation Authority	Philadelphia	PA-NJ-DE-MD	US	$1,453,021,000.00	$749,620,000.00	*$2,202,641,000.00*	Operational Budget
New Jersey Transit Corporation	New York-Newark	NY-NJ-CT	US	$2,315,900,000.00	$1,460,000,000.00	*$3,775,900,000.00*	Operational Budget
City and County of San Francisco	San Francisco-Oakland	CA	US	$1,137,500,000.00	*$521,124,218.00*	*$1,658,624,218.00*	Operational Budget
Calgary Transit	Calgary	AB	CA	$445,334,000.00	$299,064,000.00	*$744,398,000.00*	N/A
OC Transpo	Ottawa	ON	CA	$610,948,000.00	$137,027,000.00	*$747,975,000.00*	Operational Budget
Edmonton Transit Service	Edmonton	AB	CA	$365,874,000.00	$1,200,000,000.00	*$1,565,874,000.00*	Operational Budget
MTA Bus Company	New York-Newark	NY-NJ-CT	US	*$1,076,947,000.00*	*$238,400,000.00*	*$1,315,347,000.00*	Total Budget
San Francisco Bay Area Rapid Transit District	San Francisco-Oakland	CA	US	$910,100,000.00	$1,418,300,000.00	*$2,328,400,000.00*	Operational Budget
King County Department of Metro Transit	Seattle	WA	US	$1,890,540,576.00	$333,333,333.33	*$2,223,873,909.33*	Operational Budget
MTA Long Island Rail Road	New York-Newark	NY-NJ-CT	US	$2,069,548,000.00	*$265,500,000.00*	*$2,335,048,000.00*	Total Budget
Metropolitan Atlanta Rapid Transit Authority	Atlanta	GA	US	$496,500,000.00	$485,003,874.00	*$981,503,874.00*	Operational Budget
Denver Regional Transportation District	Denver-Aurora	CO	US	$755,412,415.00	$830,744,000.00	*$1,586,156,415.00*	Total Budget
Tri-County Metropolitan Transportation District of Oregon	Portland	OR-WA	US	*$710,122,724.00*	*$274,200,000.00*	*$984,322,724.00*	Operational Budget
Metro-North Commuter Railroad Company	New York-Newark	NY-NJ-CT	US	$1,925,997,000.00	*$889,000,000.00*	*$2,814,997,000.00*	Total Budget
Port Authority Trans-Hudson Corporation	New York-Newark	NY-NJ-CT	US	$438,745,000.00	$350,807,000.00	*$789,552,000.00*	Operational Budget
Maryland Transit Administration	Baltimore	MD	US	$416,900,000.00	$375,200,000.00	*$792,100,000.00*	
Metropolitan Transit Authority of Harris County, Texas	Houston	TX	US	$626,210,000.00	$285,967,275.00	*$912,177,275.00*	Total Budget
San Diego Metropolitan Transit System	San Diego	CA	US	$426,696,248.00	$81,680,000.00	*$508,376,248.00*	Operational Budget
GO (Metrolinx)	Greater Toronto and Hamilton Area	ON	CA	*$913,600,000.00*	*$755,000,000.00*	*$1,668,600,000.00*	Operational Budget
Metro Transit	Minneapolis-St. Paul	MN-WI	US	$445,500,000.00	$3,204,108,000.00	*$3,649,608,000.00*	Operational Budget
County of Miami-Dade	Miami	FL	US	*$328,410,000.00*	*$235,194,027.00*	*$563,604,027.00*	
Winnipeg Transit	Winnipeg	MB	CA	*$204,206,000.00*	*$39,771,000.00*	*$243,977,000.00*	Operational Budget
Dallas Area Rapid Transit	Dallas-Fort Worth-Arlington	TX	US	*$544,265,823.00*	*$291,519,681.00*	*$835,785,504.00*	Total Budget
Regional Transportation Commission of Southern Nevada	Las Vegas-Henderson	NV	US	*$295,189,291.00*	*$68,570,601.00*	*$363,759,892.00*	Operational Budget

Agency - Other Revenues	Agency - Farebox Revenue	Agency - inter-governmental or inter-agency contracts	Agency - rent / lease / utilities	Agency - Parking Sales tax & Taxi service & tolls & HOT lanes	Agency - Reserve Funds & carry forward credit	Agency - Reimbursements	Agency - Investment and Interest income	Agency/ Local - Property Tax	Municipal - Operating Assistance & subsidies	Local - Operational Assistance and subsidies	State - dedicated tax	Local - Sales Tax	State - vehicle and gas taxes	State - new development and property ownership related taxes	State - Payroll Tax	State - operating assistance and subsidies	State - Sales Tax	Federal and State - Other	Federal - Operational Assistance and grants
2.87%	26.33%	1.84%				8.74%			2.65%	1.23%	9.29%		4.20%	4.85%	6.84%	1.86%			
2.93%	62.57%		0.72%		1.19%			32.55%											
3.27%										86.47%									
5.55%	38.85%						0.14%			0.33%				4.40%		8.03%	30.13%	13.77%	
0.59%	31.99%			7.02%	1.16%		2.64%	19.11%					18.32%	0.89%		1.07%			16.29%
1.43%	4.58%			0.95%	17.69%	15.14%				6.38%		51.07%	2.28%						0.48%
3.73%	32.64%													9.04%			50.17%	2.22%	
5.40%	38.81%	1.31%	0.61%						2.61%	32.18%						20.10%			0.23%
2.66%	33.53%						0.18%		7.24%	0.25%						48.21%			5.12%
5.07%	42.57%	6.65%											3.55%			13.28%		6.84%	22.06%
4.24%	18.33%			31.37%	1.81%				44.25%										
32.86%	12.33%								48.90%										
	38.09%				0.48%	1.29%			61.98%										
1.57%	16.83%					0.45%				62.10%									
7.22%	53.39%							5.14%		0.59%		29.07%	0.71%			3.48%			
1.08%	21.75%	19.02%					1.75%	3.15%	0.01%			46.87%							3.03%
2.01%	31.85%					16.40%													
2.44%	26.22%		1.84%									49.85%	5.04%						14.98%
1.15%	10.31%				0.54%		0.99%										42.14%		5.47%
1.10%	16.69%	2.35%					0.28%		0.00%						58.86%	0.28%			13.05%
2.02%	26.93%					1.14%				6.16%									
0.42%	45.80%		2.38%																
0.63%	1.54%					1.13%	1.13%												
1.13%	7.39%			0.79%			0.24%					63.01%							8.23%
4.98%	21.58%	0.03%		0.23%					0.10%			10.37%				16.83%			14.34%
4.86%	68.70%															26.44%			
1.92%	11.20%						0.32%			8.28%			48.36%			10.01%			7.49%
						1.13%													
2.51%	42.38%								34.55%							20.55%			
1.70%	10.22%						2.06%					75.15%							
1.38%	23.88%											53.91%						22.63%	41.84%

NOTE: This is a summarized version as the first version is too wide to display.

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