Jacobs

OahuMPO Revenue Study

Transportation Revenue Forecasting and Alternative Revenue Study

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List of Abbreviations and Acronyms

Abbreviation	Definition
ADHS	Appalachian Development Highway System
ATM	automated teller machine
BFS	[City and County of Honolulu] Department of Budget and Fiscal Services
BRA	Boston Redevelopment Authority
BRT	bus rapid transit
BUILD	Better Utilizing Investments to Leverage Development
BWS	Board of Water Supply
CAGR	compounded annual growth rate
CARES	Coronavirus Aid, Relief, and Economic Security
CDTLS	Community Development Transportation Lending Services
CIG	Capital Investment Grant
CIP	capital improvement projects
CMAC	[FHWA] congestion mitigation and air quality improvement program
COVID-19	coronavirus disease of 2019
CPECAC	Copley Place Expansion Citizens Advisory Committee
CPI	Consumer Price Index
CPI-U	Consumer Price Index for All Urban Consumers
CRA	Community Redevelopment Agency
CRF	Community Reinvestment Fund
DBEDT	Department of Business, Economic Development & Tourism
DBFOM	Design-Build-Finance-Operate-Maintain
DOT	Department of Transportation
DTS	[City and County of Honolulu] Department of Transportation Services
ER	Emergency Relief

FAST	Fixing America's Surface Transportation
FDR	Franklin D. Roosevelt
FFGA	Full Funding Grant Agreement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	fiscal year
GDP	gross domestic product
GET	general excise tax
GO	General Obligation
HAR	Hawaii Administrative Rules
HART	Honolulu Authority for Rapid Transportation
HDOT	State of Hawaii Department of Transportation
HIP	Highway Infrastructure Program
HRS	Hawaii Revised Statutes
HRTP	Honolulu Rail Transit Project
HSIP	Highway Safety Improvement Program
LOGT	Local Option Gas Tax
LRT	Light Rail Transit
MP	Metropolitan Planning
MPO	Metropolitan Planning Organization
MTA	Metropolitan Transportation Authority
NCRR	North Carolina Railroad
NHFP	National Highway Freight Program
NHPP	National Highway Performance Program
NSTP	New Starts Transit Program
O&M	operations and maintenance

OahuMPO	Oahu Metropolitan Planning Organization
OL	obligation limitation
ORTP	Oahu Regional Transportation Plan
OTS	Oahu Transit Services, Inc.
P3	Public Private Partnership
PAB	Private Activity Bonds
PDX	Portland International Airport
PFC	Passenger Facility Charge
PTSF	[City and County of Honolulu] Public Transportation System Fund
PFC	passenger facility charge
RAG	Red-Amber-Green
RHCP	Railway-Highway Crossing Program
ROW	right-of-way
SCC	Skyway Concession Company
SFCTA	San Francisco County Transportation Authority
SIB	State Infrastructure Bank
STBG	Surface Transportation Block Grant Program
TAT	transient accommodations tax
TIF	Tax Increment Financing
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIGER	Transportation Investment Generating Economic Recovery
TJPA	Transbay Joint Powers Authority
TOD	Transit-Oriented Development
TriMet	Tri-County Metropolitan Transportation District of Oregon
UHERO	University of Hawaii Economic Research Organization
U.S.	United States

VMT	vehicle miles traveled
YOE	year of expenditure

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1 Introduction

1.1 Background

The Oahu Metropolitan Planning Organization (OahuMPO) engaged Jacobs Engineering Group (Jacobs) to prepare a Transportation Revenue Forecasting and Alternative Revenue Study along with an exploration of future alternative funding strategies for the OahuMPO and its partner agencies. This study includes a detailed revenue analysis and a discussion of future funding strategies. The deliverables from this effort are to aid OahuMPO in its development of a fiscally constrained long-term regional transportation plan, the Oahu Regional Transportation Plan 2045 (ORTP 2045).

As part of Hawaii's statewide transportation planning process, policy and planning activities must be coordinated with funding and implementation activities. A combination of funding and financing from multiple sources is used to successfully deliver programs and projects that meet needs and maximize value. Given funding constraints throughout the transportation sector, for any program or project the goal is to optimize or find the right mix of available funding and financing that maximizes tax-payer value and strategic objectives.

It is important to note that not all funding and financing sources are always available for each project. For example, availability of funds can be dependent on state and local statutes, current and projected fiscal environment, political will, project characteristics, and other considerations.

1.2 Scope of Study

To gain insight into potential future funding and financing sourcing options, the consultant team conducted a detailed review of existing information and transportation plans in 2019. In addition, the consultant team reviewed State of Hawaii and City and County of Honolulu financial statements, identified how current State and City projects are funded, and considered the reliability of existing revenue sources. Where information was available and to a reasonable extent, the team also reviewed existing documentation to understand how various modes of transportation are financially supported, including seeking to understand whether and to what extent various modes are subsidized or pay for themselves.

The review of existing 2019 information included a review of the existing financial statements, which include the current highway fuel taxes, vehicle registration fees, vehicle weight taxes, rental motor vehicle taxes, tour vehicle surcharge taxes, and other related revenue sources. As part of the existing policy review, the consultant team reviewed the past federal highway dollars for the State of Hawaii Department of Transportation (HDOT), related metropolitan planning organizations (MPOs), and the City and County of Honolulu, based on the data provided by the OahuMPO. In addition, the consultant team received feedback from the OahuMPO and its partner agencies in a series of workshop meetings.

By coupling available information and performing analysis, the consultant team forecasted the reasonably expected future revenues for transportation for the State of Hawaii and the City and County of Honolulu under existing policies. The methodology was initiated with a review of background documentation and development of revenue assumptions, followed up by a Red-Amber-Green (RAG) assessment and several workshops, and concluded with a revenue modeling and analysis exercise as further detailed in Section 3 of this report. This methodology led to the final revenue expectations as described within this report.

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2 Revenue Analysis Preparation

2.1 Revenue Information Review

The purpose of the revenue information review was to first validate and confirm forecast assumptions, and then ultimately to forecast revenues within a reasonable range. Nearly all forecasting exercises are faced with limitations related to incomplete data. Therefore, it was critical to evaluate the data quality of existing information and to fill any gaps with appropriate assumptions. Publicly available information reviewed for the purpose of providing a sound revenue analysis includes the following (for a full bibliography, see Appendix D):

- State of Hawaii Department of Business, Economic Development & Tourism (DBEDT) data, including the long-range forecast and population data.
- City and County of Honolulu short-term (5-year) capital improvement plan and capital investment plan traffic counts over a reasonable period, such as granular data and annual traffic counts, reported to the Federal Highway Administration (FHWA).
- Real estate and transportation data, including the following:
  - Breakdown of commercial real estate and residential.
  - Land use projections to 2050 – current land use and entitled but unconstructed projects that have been included in the Transportation Demand Forecasting Models.
  - University of Hawaii Economic Research Organization (UHERO) – annual construction forecast.
  - Airport – growth at the airport (travelers and cargo).
  - Number of transit users.
- Additional data:
  - Ride share data from local agencies regarding transportation network companies (additional taxi data was desirable but very limited).
  - Transit fare.

The sources and supporting documents used in the revenue study for Oahu are mainly the financial statements published and made publicly available by federal, state, and county agencies. Specific materials reviewed include but are not limited to the following:

- U.S. Department of Transportation FHWA Comparison of actual fiscal year (FY) 2015 apportionments under the Highway and Transportation Funding Act of 2014 as Amended.
- FHWA summary of estimated total apportionments under the Fixing America's Surface Transportation (FAST) Act from 2016 to 2020.
- Federal Transit Administration (FTA) full year apportionments and/or allocations by state for selected FTA programs from 1998 to 2020.
- State of Hawaii Comprehensive Annual Financial Report from FY 2000 to 2020.
- City and County of Honolulu Comprehensive Annual Financial Report from FY 2000 to 2020.
- Financial Statements and Independent Auditor's Report for the Honolulu Authority for Rapid Transportation.
- In addition to the above sources of information, the team performed a review of the precedent and historical revenue sources. The key sources include federal funds (FTA and FHWA), the State of Hawaii, and City and County of Honolulu sources. Section 3 provides further details of each of these

major sources. A list of data reviewed is provided in Appendix B, Assumptions and Data Book. A full bibliography is provided in Appendix D.

2.2 Economic Forecasts

In an effort to achieve a better understanding of the future growth assumptions, the consultant team performed a series of economic forecasting exercises. Economic forecasting is used to understand the long-term growth factors for the revenue model. Within the model, the economic forecasting metrics informed revenue growth assumptions to ensure forecasted amounts are withing a reasonable range for the local economy. This subsection describes our approach to the economic growth forecasting and how the growth assumptions were applied to the revenue model.

The consultant team conducted sensitivity analyses for a select few major economic indicators used in this study. These economic indicators inform transportation revenue growth assumptions. The select few indicators include population, gross domestic product (GDP), income, air seats, and real property valuation. As part of the sensitivity analyses, historical annual data was captured, as well as the 3-year moving average and 5-year moving average, to ultimately arrive at a reasonable level of certainty regarding economic growth factors.

Table 2-1 summarizes the sensitivity factors, where growth rates based on each economic indicator are summarized as high, medium, and low, along with the Consumer Price Index (CPI) used for the revenue forecast. The low and high growth factors and inflation indexes are used as part of the sensitivity analysis, whereas the mid values are used in the forecasting.

Table 2-1. Long-Term Annual Growth Factors

Economic Indicator	Low	Mid	High
Population	0.7%	0.9%	1.0%
GDP	4.0%	4.3%	6.0%
Income	4.1%	4.3%	6.0%
CPI	1.0%	2.0%	3.0%

Note: % = percent

The population information was collected from the UHERO database, and the economic forecast was specifically built based on the annual resident population within the state from 1988 to 2018. The GDP information was obtained from Federal Reserve Bank Economic Research for total gross domestic product for Hawaii from 1997 to 2018. The personal income forecast was based on 1988 to 2018 statewide data obtained from the UHERO database. The air seats data for the State of Hawaii and real property valuation data for the City and County of Honolulu were also obtained from the UHERO database.

2.3 Revenue Assumptions Development

In any revenue forecasting exercise, assumptions are developed to lay the foundation for future projections. Assumptions were developed via a process of background documentation reviews, research, data validation, and client workshops attended by various subject matter experts convened by OahuMPO. As part of the workshops, an additional layer of due diligence was also conducted in the form of a RAG assessment (Section 2.4).

The Jacobs team led the workshops, provided input, and undertook post-workshop analysis to develop the assumptions further. Participants provided valuable input by sharing their views and experiences. The input

gathered focused on the completeness of the revenue assumptions, the reasonableness of the values and data, and the robustness of the inputs for the model. The team also reviewed the RAG assessment results (Section 2.4) with a stated goal to convert as many reds and ambers into greens through input at the workshop. The team provided input into the necessary revenue assumptions based on the knowledge and information confirmed throughout the work. All assumptions were documented and shared with OahuMPO for review and input.

Table 2-2. Working Group and Stakeholder Meetings

Session Number	Date	Key Oahu Participants	Theme and/or Highlights
#1	2019-02-27	OahuMPO, HDOT, DBEDT, DTS, FHWA	Kick-off meeting
#2	2019-04-04	OahuMPO, HDOT, DBEDT, DTS, FHWA	Review data sources, assumptions, and case studies
#3	2019-08-12	OahuMPO, HDOT, DBEDT, FHWA	Review preliminary revenue forecast, RAG assessment, economics analysis
#5	2020-04-10	OahuMPO	Forecast model presentation
#6	2020-11-09	OahuMPO	Review report
#7	2020-11-23	OahuMPO, FHWA	FHWA/OahuMPO Revenue Forecast Discussion
#8	2020-11-30	OahuMPO, BFS, DTS	City agency report review
#9	2020-12-01	OahuMPO, HDOT	State agency report review
#10	2020-12-09	OahuMPO, BFS, DTS	City agency report review
#11	2020-12-22	OahuMPO, FTA	FTA/OahuMPO Revenue Forecast Discussion
#12	2020-12-23	OahuMPO, HART	HART revenue forecast discussion
#13	2021-01-05	OahuMPO, HDOT, DBEDT	State agency report review
#14	2021-01-06	OahuMPO, BFS, DTS	City agency report review
#15	2021-01-25	OahuMPO, DTS	City agency report review

Notes:

BFS = City and County of Honolulu Department of Budget and Fiscal Services

DTS = City and County of Honolulu Department of Transportation Services

This was a progressive elaboration process. There were multiple iterations of the Assumptions and Data Book prior to completion. Dialogue about assumptions for current methods continued in conjunction with meetings to workshop participants to consider new or alternative funding options.

2.4 RAG Assessments

The consultant team collaborated with OahuMPO to perform a RAG assessment of all the revenue forecast assumptions. The team worked with OahuMPO to assess credibility of sources and relevancy to OahuMPO, determining the appropriate level of detail, and perform a reasonableness check to confirm assumptions fall within the expected ranges.

A key part of the RAG assessment is the RAG Indicator (Figure 2-1). The RAG indicator is used to review forecast assumptions by determining if they are based on the required evidence that form a consistent explanation with a sound rational.

Figure 2-1. RAG Indicator

Revenue Foreast Model			Initial RAG Assessment			
<<Worksheets>>	Review Progress		Modelling Methodology	Model Inputs & Assumptions	Model Outputs & Results	Model Documentation
Non-time-based Inputs >>	90%		1.00	1.34		
Forecast Start	100%					
Forecast Duration	100%					
.....						
State of Hawaii						
General Fund Tax Revenues	100%					
Net Corporate and Individual Income Tax r	100%					
.....						
City and County of Honolulu						
Fines and Forfeits	100%					
Real Property Tax	100%					
.....						
Honolulu Authority for Rapid Transportation (HART)						
County surcharge on State GET	100%					
Intergovernmental revenues	100%					
.....						
Time-based Input >>	57%		1.75	2.21		
Population	100%					
Household Statistics	75%					
Hawaii Visitor	75%		2	2		
Economic Assumption >>	66%		1.70	1.70		
Labor Cost Inflation	100%					
Real Estate Inflation	100%					
.....						
Growth Rate						
Traffic	0%					
Rider-share	20%					
Real estate	80%		2	2		
Air seats	75%		2	2		
.....						

Key:

RAG Indicator	Description
1	Evidence largely complete / consistent explanations with sound rationale
2	Evidence reasonable but with some gaps / inconsistencies in a few areas
3	Partial evidence with some significant gaps / inconsistences identified
4	Evidence contradictory or completely lacking / risk of material misstatement

2.5 Adjustments Considering COVID-19

The COVID-19 crisis is having a significant impact on the global and U.S. economies both at all levels of government and in the private sector. In particular, in states that rely on travel and tourism as a key revenue source, such as Hawaii, these impacts are being felt by the private sector and local governments. Therefore, in addition to the long-term inflation indicators, the short-term revenue forecast was adjusted to reflect the economic impacts of COVID-19 by applying negative escalation factors.

Table 2-3 and Table 2-4 summarize revenue growth rates the State of Hawaii and City and County of Honolulu, respectively. These growth rates are used in determining adjustments to the revenue forecasts presented in Section 3 of this report. The adjustments have been made for the City and State FY 2020 to FY 2025 and are consistent with negative escalation adjustments forecasted by HDOT and DBEDT.

Assuming full economic recovery from COVID-19 crisis between FY 2025 and FY 2027, a growth factor of 2 percent is assumed for all future years. The escalation adjustment made herein attempts to account for some level of risk to revenue. We recommend that OahuMPO perform annual or semiannual reviews over the next 3 to 5 years to further assess the impacts of COVID-19 to transportation revenue locally, as the nature of the pandemic and governmental responses continue to evolve.

Table 2-3. State of Hawaii Revenue Growth Factors: Fiscal Years 2020 to 2025 Considering Impact of COVID-19

Revenue Source	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Weight Tax and Registration Fee	-6.8%	0.3%	0.6%	2.5%	2.4%	3.4%
Liquid Fuel Tax	-7.0%	-14.1%	6.3%	5.9%	5.6%	5.3%
Rental Motor/Vehicle Surcharge Tax	25.0%	-52.3%	94.4%	14.3%	18.8%	5.3%
Licenses and Fees	-6.8%	0.3%	0.6%	2.5%	2.4%	3.4%
Fines, Forfeitures, and Penalties	-6.8%	0.3%	0.6%	2.5%	2.4%	3.4%
Total (composite)	**-1.00%**	**-15.57%**	**14.39%**	**5.93%**	**7.09%**	**4.31%**

Source: Department Of Transportation-Highway Division. Highway Special Fund (HRS 248-8). Financial summary as of October 21, 2020, Iteration: FB 21-23, FY 2018 CAFR, and FY 2019 CAFR.

Notes:

Revenue is in thousands of dollars, calculated as percent change. Fiscal year is July 1 to June 30.

Licenses, fees, fines, forfeitures, and penalties are based on HDOT Weight Tax and Registration Fee growth rate.

Growth factors are used for the revenue forecasts in Section 3.

HRS = Hawaii Revised Statutes

Table 2-4. City – County of Honolulu Revenue Growth Factors: Fiscal Years 2020 to 2025 Considering Impact of COVID-19

Revenue Source	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Taxes (for Highway Fund)	-1.0%	-15.6%	14.4%	5.9%	7.1%	4.3%
Licenses and permits (for Highway Fund)	-1.0%	-15.6%	14.4%	5.9%	7.1%	4.3%
Charges for services (for Highway Fund)	-1.0%	-15.6%	14.4%	5.9%	7.1%	4.3%
Fines and forfeits (for Highway Fund)	-1.0%	-15.6%	14.4%	5.9%	7.1%	4.3%
Reimbursements and recoveries (for Highway Fund)	-1.0%	-15.6%	14.4%	5.9%	7.1%	4.3%
Others (for Highway Fund)	-1.0%	-15.6%	14.4%	5.9%	7.1%	4.3%
Total (composite)	**-1.0%**	**-15.6%**	**14.4%**	**5.9%**	**7.1%**	**4.3%**

Note: Growth factors are used for the revenue forecasts in Section 3.

It is also important to note that FHWA and FTA transportation funding forecasts have not been adjusted for impacts of COVID-19. This is because these funds are appropriated by Congress, and the U.S. government typically has attempted to provide measures of economic stability through financial crises by preserving and/or increasing spending when tax revenues decrease.

3 Revenue Analysis Forecast

3.1 Revenue Modeling

As part of this study, the team analyzed assumptions based on 2018 and 2019 data to develop a revenue model for forecasting revenue related to OahuMPO for the study period of 2021 to 2045. The revenue model is composed of four major components, which include the source data sheet, inputs and assumptions, calculations, and modeled outputs. The complete sets of data as well as any related notes are included in Appendix B, Assumptions and Data Book for the Revenue Forecast Model. The following sections discuss each of the four components in more details.

3.1.1 Source Data

As discussed in Section 2, the team reviewed various 2018 and 2019 source data and completed data validation exercises in 2019 to ensure the data was relevant to the revenue forecast. When reviewing the base data and information sources, the Jacobs and client team performed a sense-check on the values to confirm the reliability, completeness, accuracy, and consistency of the underlying data. Once a review of the data was complete, appropriate data were extracted and incorporated into the revenue model to be used for the development of the revenue forecast.

3.1.2 Input and Assumptions

The consultant team developed an Assumptions and Data Book (Appendix B) to document input information referenced for modeling purposes. Individual tables were developed for all the economic assumptions and revenue assumptions used in the forecasting model. The assumption name, assumption base value, whether the assumption has been verified with OahuMPO, the confidence level (low/medium/high), if further investigation is required, the source of assumption, and any notes were recorded for all data and assumptions.

The revenue model includes three input sheets: a non-time-based input sheet, time-based input sheet, and an economic assumption sheet. These three input sheets list any input data and assumptions from the Assumptions and Data Book that are used in the calculations. In general, non-time-based inputs cover a series of data points indexed in time order or a time series, whereas time-based inputs are usually presented in the format of a time series. The economic assumption sheet includes the inflation factors and the economic growth factors (described in Section 2.4).

3.1.3 Calculations

The revenue model includes three calculation sheets:

1. Inflation and adjustment calculation sheet: Summarizes inflation factors that reflect current industry standard for general CPI (as shown in the values in Table 2-1), labor costs, real estate values, construction costs, and equipment costs over the forecast period.

2. State of Hawaii calculation sheet: Contains the escalated forecast calculations for each of the State's revenue sources (source data provided by HDOT fiscal office).

3. City and County of Honolulu calculation sheet: Contains the escalated forecast calculations for each of the City's revenue sources.

3.1.4 Modeled Outputs

The output sheet serves as the dashboard of the revenue model, demonstrating the key results from the revenue forecast calculations. The dashboard includes bar charts that illustrate the revenue forecasts developed and summary tables of the calculated results. The complete set of outputs are included in Section 3.3. Major components of the 2021-2045 revenue forecast outputs include the following:

- Revenue from FHWA.
- State of Hawaii revenue.
- City and County of Honolulu revenue.

3.2 Customized Outputs

The revenue model is the core instrument to understand future revenue and is used to perform detailed analysis (for example, scenario and sensitivity testing). The model allows for an analysis of revenue impacts and is a key tool that can be used for due diligence and to inform decision-making within the scope limits. The consultant team prepared a cash-flow forecast in Microsoft Excel using inputs collected as part of the previous tasks including background information review, revenue assumptions development, RAG assessment, and revenue assumptions workshop tasks.

3.3 Funding Summary and Expected Revenue

3.3.1 Sources of Revenue for Land Transportation on Oahu

Surface transportation projects on Oahu receive revenues from various sources at the federal, state, city and county, and project-specific level. In general, funding sources include federal grants and appropriations to both the State and the City and County. Transit operations are partially self-supported by transit operating revenues, which are primarily fares. In addition, private funding, such as Public Private Partnership (P3) or developer-funded projects, may be used to help support specific improvement projects on a case-by-case basis.

3.3.1.1 Federal Revenue Sources

Under the FAST Act, Oahu received authorizations from FHWA. The federal-aid highway program supports state highway systems by providing financial assistance for the construction, maintenance, and operations of the state's highway network.

Active federal-aid highway programs include the following:

- National highway performance program (NHPP).
- Surface transportation block grant program (STBG).
- Highway safety improvement program (HSIP).
- Railway-highway crossing program (RHCP).
- Congestion mitigation and air quality improvement program (CMAQ).
- Metropolitan planning program (MP).
- National highway freight program (NHFP).

Additional FHWA revenue sources include the discretional programs of Ferry Boat Program and Highway Infrastructure Program (HIP), which are not currently being used on Oahu. Accordingly, no forecasts for these funds are included in this report.

Table 3-1. FHWA Revenues by Program

Revenue Source	Hawaii Apportionment Total (25-year Forecast)	85% FHWA Obligation Limitation	Percent to Oahu [a]	Forecast Amount for OahuMPO Budgeting
National Highway Performance Program (NHPP)	$3,404,892,172	$2,894,158,346	Not applicable	Not applicable
Surface Transportation Block Grant Program (STBG)	$1,705,743,936	$1,449,882,346	Not applicable	Not applicable
Railway-Highway Crossing Program (RHCP)	$40,021,860	$34,018,581	Not applicable	Not applicable
Metropolitan Planning (MP)	$61,954,296	$52,661,152	Not applicable	Not applicable
Highway Safety Improvement Program	$332,615,892	$282,723,508	Not applicable	Not applicable
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	$364,841,493	$310,115,269	Not applicable	Not applicable
National Highway Freight Program (NHFP)	$209,453,830	$178,035,755	Not applicable	Not applicable
Total	**$6,119,523,478**	**$5,201,594,957**	**55%**	**$2,860,877,226**

[a] As the individual FHWA funding programs are to varying degrees flexible and are distributed across the state differently each year, the Oahu percentage is calculated only on the FHWA total.

Table 3-2 breaks the forecasted FHWA revenues down into 5-year increments.

Table 3-2. Forecasted FHWA Revenues 5-year Aggregation (includes 85% OL and 55% Oahu share deductions)

Revenue Source	FY 2021 to 2025	FY 2026 to 2030	FY 2031 to 2035	FY 2036 to 2040	FY 2041 to 2045
FHWA Total	$464,813,633	$513,191,809	$566,605,225	$625,577,952	$690,688,607

According to FHWA, the estimated FY 2020 apportionment for Hawaii is approximately $187,308,000 (before post-apportionment set-asides, penalties, or sequestration). Annual apportionments under the federal-aid highways programs are subject to obligation limitations, which are designed and implemented to ensure smooth and stable flows of cash to the states, as highway improvement projects are often multi-year efforts whereas congressional apportionments are annual. According to both FHWA and HDOT, Highways Division, the Limitation on Obligations imposed on the annual apportionment is 85 percent in Hawaii. Therefore, approximately $159 million of the $187 million would be available for budgeting purposes.

In addition, many of the program funds listed in Table 3-1 are flexible in nature and can vary in location of use from year to year. As a result, the Oahu-specific percentages of each individual fund could not be estimated. However, according to data provided by HDOT, in total, approximately 50 to 55 percent of FHWA funding annually becomes available to projects on Oahu. The project team determined that it would be wiser to use the upper range of this percentage (55 percent) as a suitable constraint for OahuMPO's budgeting purposes.

Overall, based on past experience in Hawaii and the estimates used by other MPOs, it is assumed that future federal highway revenues will grow at an average rate of 2 percent per year during the study period. This growth factor is reasonable and consistent with the findings of the consultant teams' economic analysis and historical trend.

The FTA also provides funding to Oahu. As the transit operator, the City is the designated recipient of formula apportionments and can also receive discretionary federal allocations from certain programs for specific projects. HDOT also receives federal transit revenues, primarily for use in non-urbanized and rural areas of the Neighbor Islands and is also an eligible recipient of certain discretionary allocations for specific projects. Discretionary funds can be transferred to a project on Oahu at HDOT's discretion. According to FTA's allocations for formula programs published on February 3, 2020, Hawaii received $33,858,000 under the Section 5307 plus 5340 Urbanized Area Formula and $2,977,000 under the Section 5311 plus 5340 Unurbanized Area Formula.

According to the HART Recovery Plan updated in May 2019, the Honolulu Rail Transit Project (HRTP) was to be completed at a cost of under $8.3 billion funded by 18.9 percent federal share (an estimated $1.55 billion) and 81.1 percent local share. It is important to note that while the HRTP is the largest and most significant single transportation improvement project on Oahu, as the $8.3 billion of state and federal funds are committed to the completing construction of the Rail, these funds have not been included in our uncommitted revenue forecasts.

The City and County is eligible and could receive discretionary federal allocations from the FTA Section 5309 for specific capital improvement projects, and all projects must be evaluated and rated by FTA in accordance with statutorily defined criteria at various points in the development process.

Table 3-3. FTA Revenues by Program

Revenue Source	Apportionment Total (25-year Forecast)	Percent to Oahu	Forecast Amount for OahuMPO Budgeting
FTA 5307, Urban Area Apportionment Urban Honolulu	$946,136,884	100%	$946,136,884
FTA 5307, Urban Area Apportionment Kailua-Kaneohe	$68,841,486	100%	$68,841,486
FTA 5310, Enhanced Mobility for Seniors and Individuals with Disabilities Urban Honolulu	$24,821,982	100%	$24,821,982
FTA 5337, State of Good Repair Apportionment Fixed Guideway	$9,697,378	100%	$9,697,378
FTA 5337, State of Good Repair Apportionment Motorbus	$21,711,940	100%	$21,711,940
FTA 5339, Bus and Bus Facilities Urban Honolulu	$126,210,290	100%	$126,210,290
FTA TOTAL	**$1,197,419,961**		**$1,197,419,961**

In addition to the FTA programs listed in Table 3-3, in 2020 FTA provided apportionments to the State of Hawaii under the following programs:

- Section 5303 and 5304 Metropolitan Planning Program and Statewide and Non-Metropolitan Planning and Research Program Apportionments.
- Section 5311 and 5340 Rural Area Apportionments.
- Section 5329(e) State Safety Oversight Program.

These programs and program funds, however, were either program-specific or applicable to neighbor islands only. Therefore, their proceeds are not included in FTA forecasts for OahuMPO budgeting purposes.

Table 3-4. Forecasted FTA Revenues 5-year Aggregation (in millions)

Revenue Source	FY 2021 to 2025	FY 2026 to 2030	FY 2031 to 2035	FY 2036 to 2040	FY 2041 to 2045	Total, FY 2021 to 2045
FTA Total	$194.5	$214.8	$237.2	$261.8	$289.1	**$1,197.4**

3.3.1.2 State of Hawaii Revenue Sources

The transportation revenue sources for the State of Hawaii are categorized under governmental funds, proprietary funds, and fiduciary funds. Governmental funds are used to account for governmental activities. Proprietary funds are used to show activities that operate more like commercial enterprise; they are also known as enterprise funds because they charge fees for services provided. Fiduciary funds are used to account for resources held for benefit of parties outside the state and they are not the focus of this study.

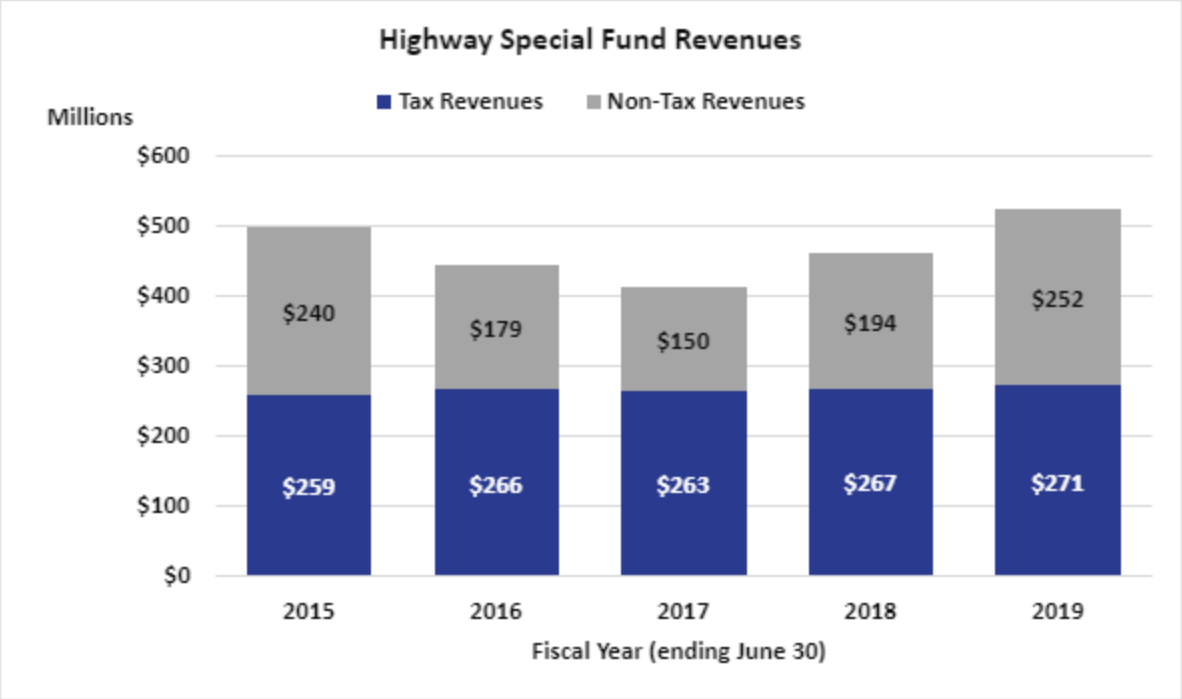
Proprietary funds are used by the State to account for the operations of airports and harbors, the Unemployment Compensation Fund, and its other business-like activities. Airport revenues include airport concession fees, aviation fuel tax, airport use charges, airport rentals, and others. Similarly, harbor revenues include harbor rentals, harbor services and others. Revenues in other proprietary funds include unemployment compensation, administrative fees, premium revenue - self-insurance, experience refunds (net), and other revenues.

The governmental funds are comprised of taxes and non-tax revenues. Major tax revenues for the state include General Excise Tax (GET), net income tax on corporations and individuals, public service companies' taxes, transient accommodations tax (TAT), tobacco and liquor tax, tax on premiums of insurance companies, franchise tax, and other tax.

Specific to Special Revenue Fund for Highways, a considerable amount of tax revenues is related to vehicles, including vehicle weight tax, vehicle registration fees, liquid fuel tax, rental motor vehicle surcharge tax, licenses and fees, and fines forfeitures penalties. The non-tax revenues to the State's governmental funds include intergovernmental revenues, charges for current services, revenues from private sources, interest and investment income, rentals, and other revenues. These are the primary revenue sources for land transportation and are therefore the focus of this revenue forecast. Figure 3-1 provides a summary of historical revenues of the State Highway Special Fund for the period FY 2015 to FY 2019. The compounded annual growth rate (CAGR) for total revenues was 0.8 percent for the same period.

It is important to note that while the CAGR for total revenues from FY 2015 to FY 2019 was 0.8 percent, assumed growth rates of revenues is 2.0 percent per year (except within fiscal years adjusted for the impacts of the COVID-19 pandemic on transportation revenues). The cause of the slow growth to highway tax revenues in FY 2015 to FY 2019 was attributed to the flat nature of liquid fuel tax revenues during that period. The HDOT has attributed lack of growth in liquid fuel tax revenues to penetration of a larger percentage of electric vehicles into the Hawaii automobile market, along with increasing popularity of fuel-efficient and hybrid vehicles. As a result of this trend, in 2019 the HDOT began a Road Usage Charge pilot program, that will tax automobiles based on vehicle miles traveled (VMT). It is believed that HDOT and the State will begin to find new supplemental and/or replacement programs to the liquid fuel tax as the state makes progress toward its laws requiring carbon neutrality by 2045. Thus, the project team, in coordination with the State of Hawaii, felt it was appropriate to forecast transportation revenues at a rate commensurate with inflation rates.

Figure 3-1. Historical State of Hawaii Revenue Summary



The following categories of funding make up Highway Special Revenue Fund Tax Revenues:

- Liquid Fuel Tax—The Highway Fund portion only of a tax on distributors for each gallon of liquid fuel refined, manufactured, produced, or compounded by the distributor and sold or used by the distributor in the state. Most commonly, distributors pass this tax on to the customers (HRS 243).
- Vehicle Weight and Registration Tax—This category is composed of vehicle weight tax and vehicle registration fees (HRS 249).
- Rental Motor, Tour Vehicle, and Car-Sharing Vehicle Surcharge Tax—This tax is composed of daily surcharge fees imposed on rental vehicles and tour vehicles and a surcharge tax per every half-hour that a motor vehicle is rented or leased by a car-sharing organization (HRS 251).

Highway Special Revenue Fund Non-Tax Revenues include the following:

- Interest and Investment Income—Revenue derived from the investment of State Highway Fund moneys on deposit in the State Investment Pool.
- Charges for Current Services—Periodic motor vehicle inspection charges, commercial license fees.
- Rentals—Rents from the State Highway System properties.
- Fines, Forfeitures, and Penalties—All other fines, forfeitures and penalty fees paid to the State Highway Fund, not listed in the Other category below (for example, as listed in Hawaii Administrative Rules [HAR] 19-241 and 19-245).
- License and Fees—Primarily drivers' licensing fees paid to the State Highway Fund.
- Other—Composed of vehicle weight tax penalties, fines for illegal parking on bikeways, fines for parking violations on State Highways known as the State Highway Enforcement Program, fines for use of mobile electronic devise while driving, and other miscellaneous revenues.

It is important to note that in FY 2018 and FY 2019, the Other category of non-tax revenues contributed approximately 33 percent of all State Highway Fund revenues, making it the single largest contributor-category. Because of the relatively large size of the category and its historic higher variability of revenues, the project team decided not to escalate this category except for the pre-COVID scenario, which assumes an annual growth rate equivalent to population growth factor on Oahu, or 0.3 percent (instead of escalating at the CPI rate of 2.0 percent as most other tax and non-tax categories were treated).

3.3.1.3 City and County of Honolulu Revenue Sources

Like the State, the City and County of Honolulu uses fund accounting. The revenue sources to the City and County are similarly categorized under three major components: governmental funds, proprietary funds, and fiduciary funds. In addition to these three components, revenues from the City's semi-autonomous or quasi-private agencies are separately calculated.

The focus of the City's governmental funds is to provide information on short-term inflows, outflows, and balances of spendable resources. It is comprised of the General Fund, Highway Fund, general obligation bond and interest redemption fund, and other funds. The General Fund is the main operating fund of the City and its primary revenue source is real property tax. The Highway Fund includes special revenue proceeds that have been earmarked by law for highway and related activities. Typically, they include the City's fuel tax, motor vehicle weight tax, and public utility franchise tax. The general obligation bond and interest redemption fund accounts for principal and interest payments on general obligation serial bonds that have been issued by the City, notes payable due to federal and state government agencies, and general obligation commercial paper notes.

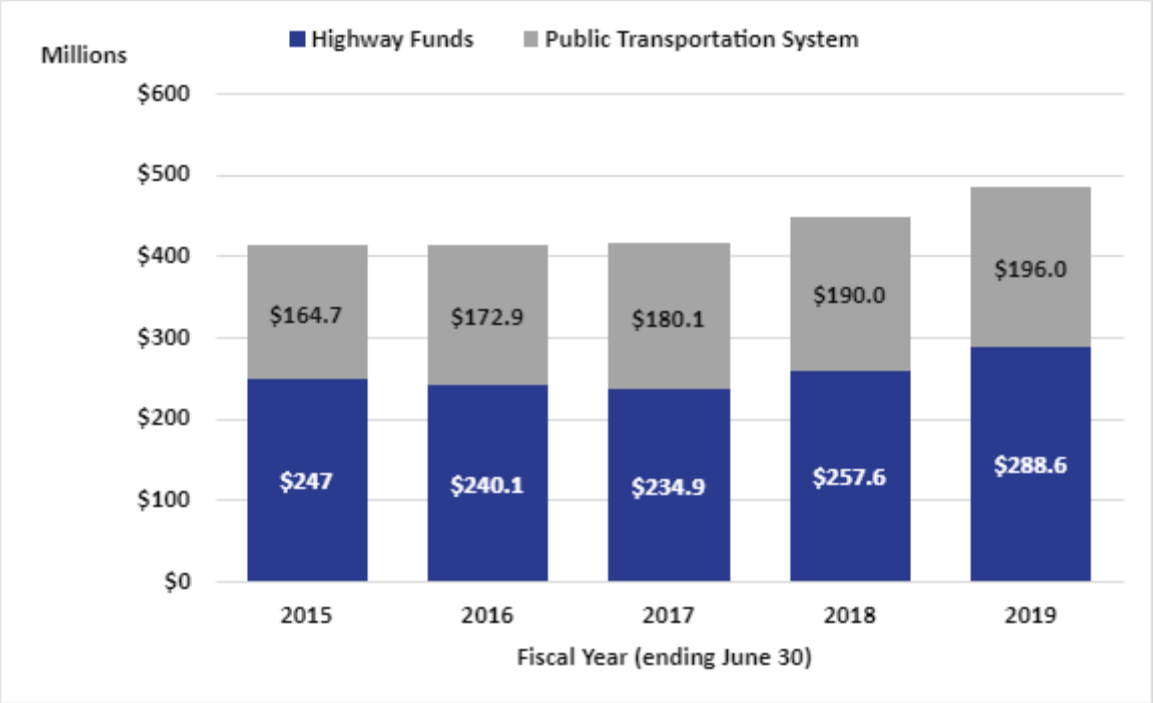
The City's proprietary funds focus on enterprise services for which the City charges fees to customers. They are comprised of the Housing Development Special Fund, Sewer Fund, Solid Waste Special Fund, and the Public Transportation System Fund.

According to the Comprehensive Annual Financial Reports, the City's discretely presented component units include the Board of Water Supply (BWS), Honolulu Authority for Rapid Transportation (HART), and Oahu Transit Services, Inc. (OTS). These organizations are legally separated from the primary government. (BWS is not part of this forecast because its revenues are not relevant to the analysis presented in this report.) Revenues sources for HART include charges for services, capital grants/contributions, investment earnings, and intergovernmental transfers (that is, GET). Revenue sources for OTS include charges for services and operating grants/contributions, with the predominant contributions coming from grants from the City and County of Honolulu, Highway Fund and General Fund which predominantly fund OTS wages and fringe benefits, fuel and energy, materials and services, and risk and insurance.

HART construction revenues are not included in this forecast because they are derived from GET, TAT, and its FTA Full Funding Grant Agreement (FFGA) and are already committed to the construction of the HRTP, and are thus not available to OahuMPO to budget for other projects. OTS revenues provided by the City and County of Honolulu from the Highway Funds are already accounted for in the City Highway Fund Forecast, and grants from the General Fund are exclusively for operations of the TheBus and TheHandi-Van services, and will grow to include rail O&M upon rail service openings.

For this report, the focus is on the highway- and transportation-related revenues, including the City and County of Honolulu Highway Fund and Public Transportation System Fund (PTSF). Figure 3-2 provides a summary of historical revenues for the period FY 2015 to FY 2019. The CAGR for total revenues was 3.3 percent for the same period. This may be skewed by increases in FY 2018 and FY 2019.

Figure 3-2. Historical City and County of Hawaii Revenue Summary



3.3.2 Revenue Projections

This section provides estimates of likely available future revenues during FY 2021 through FY 2045, as well as presents historical funding available for regional transportation projects and programs from federal, state, city and county, and other sources. Looking forward, it is recognized that the recent worldwide economic crisis and the future reauthorization of federal surface transportation program funding creates significant uncertainty in forecasting future revenues for the next 25 years. It is also unclear whether the federal tax sources that feed into the Highway Transportation Fund will be able to support future expenditure levels. Consistent with previous revenue forecast requirements as in ORTP 2035, forecasted revenues for the years 2021-2045 must be those that are considered firmly established and the estimated future growth trends should be based on historical data and trend analysis.

The following revenue estimates for 2021 through 2045 are based on data received from the State and City official websites and transportation officials. Table 3-5a and Figure 3-3 summarize the major transportation-related revenues in the state. The amounts shown are the total amount of revenue over the period of 2021 through 2045 in thousands of dollars. It is assumed that the amount of State funds allocated to Oahu varies from year to year. According to historical data, the annual percentage of the State's capital improvement program funds spent on Oahu varied between 16.5 percent and 69 percent, with an average of 50 percent from 2000 to 2008, and approximately 33 percent of the operations and maintenance (O&M) funds were spent on Oahu on average during the same period. As described in Section 2, the revenue forecasts incorporate various factors including growth rates, inflation, and COVID-19 adjustments. Depending on the pace of the recovery from COVID pandemic impacts, growth rates may vary. The CAGR from FY 2021 to FY 2025 is 2.2 percent and is largely influence by increases relative to FY 2020 conditions associated with recovery from COVID pandemic impacts. From FY 2025 to FY 2027 growth flattens based on the relative forecasts provide by the State and the CAGR is 0.5 percent. An annual growth rate of 2 percent is assumed for FY 2028 to FY 2045.

Figure 3-3. State of Hawaii Revenue Summary (COVID-19 Adjusted Base Case, 2021 to 2045 Total in Thousands)

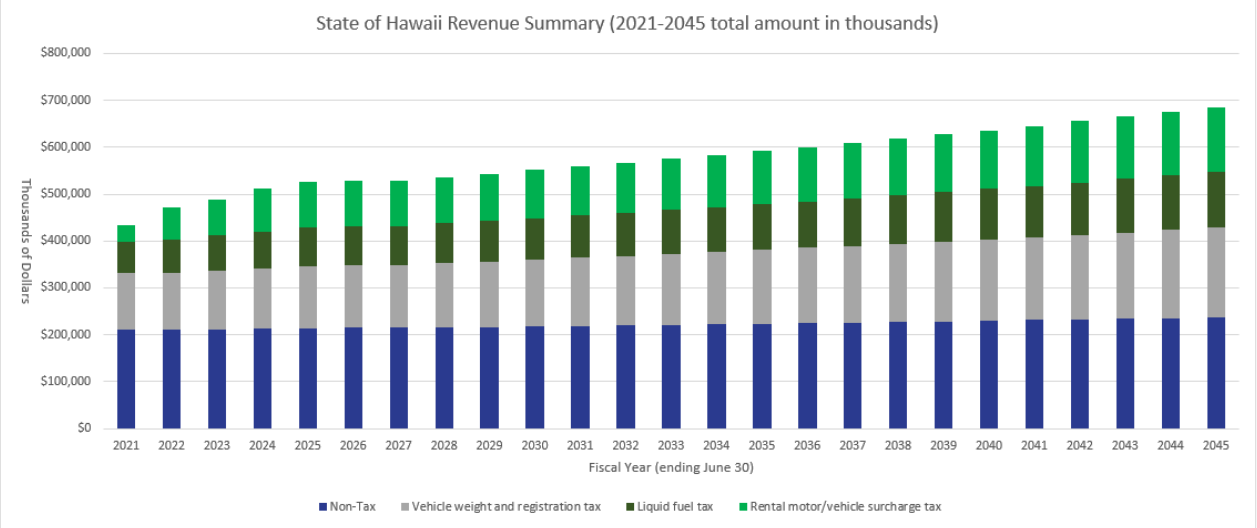


Table 3-5. State Major Transportation-Related Revenue Summary (COVID-19 Adjusted Base Case, 2021 to 2045 total in thousands)

Fiscal Year (ending June 30)	Vehicle Weight and Registration Tax	Liquid Fuel Tax	Rental Motor/Vehicle Surcharge Tax	Non-Tax	Total
2021	$121,764	$66,400	$34,560	$210,090	$432,814
2022	$122,463	$70,550	$67,200	$210,359	$470,572
2023	$125,499	$74,700	$76,800	$211,527	$488,526
2024	$128,499	$78,850	$91,200	$212,681	$511,230
2025	$132,815	$83,000	$96,000	$214,342	$526,157
Subtotal	**$631,040**	**$373,500**	**$365,760**	**$1,058,998**	**$2,429,298**
2026	$133,480	$83,000	$96,480	$214,598	$527,558
2027	$134,147	$83,000	$96,962	$214,855	$528,964
2028	$136,830	$84,660	$98,901	$215,887	$536,278
2029	$139,567	$86,353	$100,879	$216,940	$543,739
2030	$142,358	$88,080	$102,897	$218,014	$551,349
Subtotal	**$686,381**	**$425,093**	**$496,119**	**$1,080,294**	**$2,687,888**
2031	$145,205	$89,842	$104,955	$219,110	$559,111
2032	$148,109	$91,639	$107,054	$220,227	$567,029
2033	$151,071	$93,471	$109,195	$221,367	$575,105
2034	$154,093	$95,341	$111,379	$222,530	$583,342

Fiscal Year (ending June 30)	Vehicle Weight and Registration Tax	Liquid Fuel Tax	Rental Motor/Vehicle Surcharge Tax	Non-Tax	Total
2035	$157,175	$97,248	$113,606	$223,716	$591,744
Subtotal	**$755,653**	**$467,541**	**$546,189**	**$1,106,950**	**$2,876,332**
2036	$160,318	$99,193	$115,879	$224,925	$600,315
2037	$163,524	$101,177	$118,196	$226,159	$609,056
2038	$166,795	$103,200	$120,560	$227,418	$617,973
2039	$170,131	$105,264	$122,971	$228,701	$627,067
2040	$173,533	$107,369	$125,431	$230,011	$636,344
Subtotal	**$834,302**	**$516,203**	**$603,037**	**$1,137,214**	**$3,090,755**
2041	$177,004	$109,517	$127,939	$231,346	$645,806
2042	$180,544	$111,707	$130,498	$232,708	$655,458
2043	$184,155	$113,941	$133,108	$234,098	$665,302
2044	$187,838	$116,220	$135,770	$235,515	$675,344
2045	$191,595	$118,544	$138,486	$236,961	$685,586
Subtotal	**$921,137**	**$569,929**	**$665,801**	**$1,170,628**	**$3,327,496**
Total	**$3,828,512**	**$2,352,266**	**$2,676,906**	**$5,554,084**	**$14,411,769**

State funding in total (as shown in Table 3-1) is then divided into purposed amounts and distributed to the various counties across the state. The purposed uses and percentage breakdown of state transportation funding are as follows:

- 12.5 percent for administrative services – These funds are unavailable for budgeting purposes and are not included in forecast totals.
- 25 percent for O&M.
- 62.5 percent for capital improvement projects (CIP).

According to HDOT, Highways Division (and similar to FHWA program funding) roughly 55 percent of state funding goes to projects on Oahu. Table 3-5b shows the resulting breakdown of the totals listed in Table 3-5a.

Table 3-5b. State Revenues Available for Transportation Budgeting on Oahu (COVID-19 Adjusted Base Case, amounts in million)

Revenue Source	FY 2021 to 2025	FY 2026 to 2030	FY 2031 to 2035	FY 2036 to 2040	FY 2041 to 2045	Total
State Total	$2,429	$2,688	$2,876	$3,091	$3,327	$14,412

Revenue Source	FY 2021 to 2025	FY 2026 to 2030	FY 2031 to 2035	FY 2036 to 2040	FY 2041 to 2045	Total
State Totals (minus 12.5% for administrative services)	$2,126	$2,352	$2,517	$2,704	$2,912	$12,610
O & M (25%)	$334	$370	$395	$425	$458	$1,982
CIP (62.5%)	$835	$924	$989	$1,062	$1,144	$4,954
Total Oahu Portion (55% of O&M plus CIP portions)	$1,169	$1,294	$1,384	$1,487	$1,601	$6,936

Figure 3-4 and Table 3-6 summarize the major transportation-related revenues in the City and County of Honolulu; the amounts shown are the total amount of revenues over the period of 2021-2045 in thousands of dollars. It should be noted that according to the City and County's financial statements, the major sources of tax revenues to the Highway Fund are gross receipts business taxes (including public utility franchise tax) and selective sales and use taxes (including fuel tax). Furthermore, according to the City and County's financial statements, majority of the licenses and permits revenue is from motor vehicle licenses and fees. At the same time, the licenses and permits revenues also include some other items, such as other vehicle licenses and fees, street and sidewalk use, freight curb and passenger loading zone permits, and excavation and repair of streets and sidewalks. Similar to the forecasts for the State of Hawaii, depending on the pace of the recovery from COVID pandemic impacts, growth rates may vary. An annual growth rate of 2 percent is assumed for FY 2028 to FY 2045.

Figure 3-4. City and County of Honolulu Highway Fund Revenue Summary (COVID-19 Adjusted Base Case, 2021 to 2045 total in thousands)

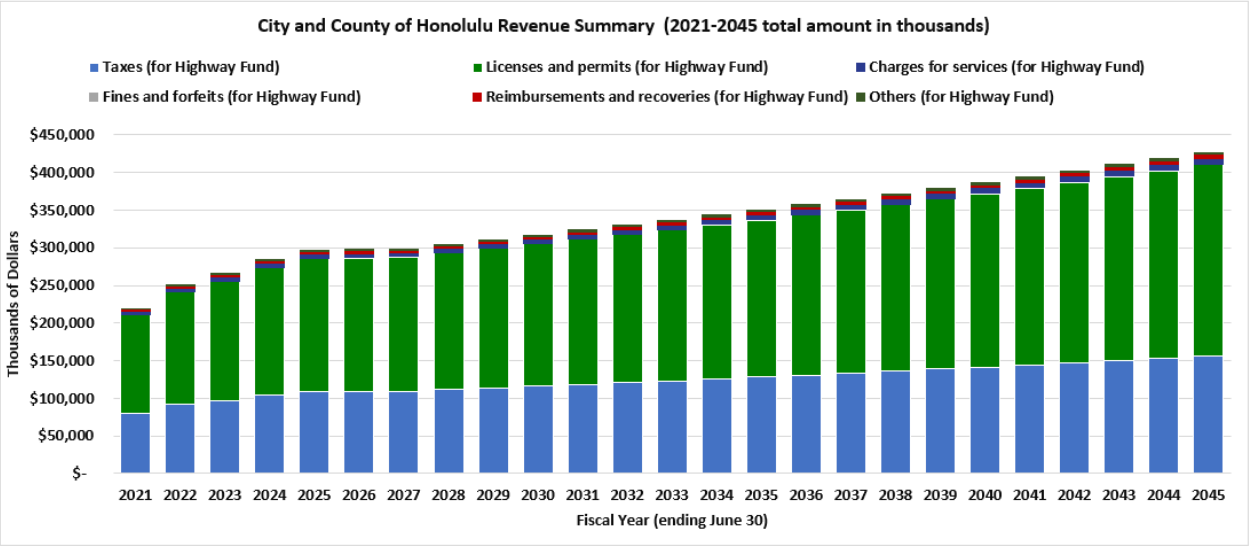


Table 3-6. City and County Highway Fund Revenue Summary (COVID-19 Adjusted Base Case, 2021 to 2045 total in thousands)

Fiscal Year (ending June 30)	Taxes	Licenses and Permits	Charges for Services	Fines and Forfeits	Reimburse-ments and Recoveries	Others	Total
2021	$80,205	$130,537	$4,068	$12	$2,493	$2,295	$219,609
2022	$91,743	$149,317	$4,653	$14	$2,852	$2,625	$251,204
2023	$97,180	$158,165	$4,928	$14	$3,020	$2,781	$266,089
2024	$104,070	$169,379	$5,278	$15	$3,235	$2,978	$284,955
2025	$108,556	$176,681	$5,505	$16	$3,374	$3,106	$297,239
Subtotal	**$481,754**	**$784,080**	**$24,432**	**$72**	**$14,974**	**$13,786**	**$1,319,097**
2026	$108,972	$177,358	$5,527	$16	$3,387	$3,118	$298,379
2027	$109,390	$178,038	$5,548	$16	$3,400	$3,130	$299,522
2028	$111,578	$181,599	$5,659	$17	$3,468	$3,193	$305,513
2029	$113,809	$185,231	$5,772	$17	$3,537	$3,257	$311,623
2030	$116,086	$188,935	$5,887	$17	$3,608	$3,322	$317,855
Subtotal	**$559,835**	**$911,161**	**$28,392**	**$83**	**$17,401**	**$16,020**	**$1,532,893**
2031	$118,407	$192,714	$6,005	$18	$3,680	$3,388	$324,213
2032	$120,775	$196,568	$6,125	$18	$3,754	$3,456	$330,697
2033	$123,191	$200,500	$6,248	$18	$3,829	$3,525	$337,311
2034	$125,655	$204,510	$6,373	$19	$3,906	$3,596	$344,057
2035	$128,168	$208,600	$6,500	$19	$3,984	$3,668	$350,938
Subtotal	**$616,196**	**$1,002,892**	**$31,250**	**$92**	**$19,152**	**$17,633**	**$1,687,215**
2036	$130,731	$212,772	$6,630	$19	$4,063	$3,741	$357,957
2037	$133,346	$217,027	$6,763	$20	$4,145	$3,816	$365,116
2038	$136,013	$221,368	$6,898	$20	$4,227	$3,892	$372,418
2039	$138,733	$225,795	$7,036	$21	$4,312	$3,970	$379,867
2040	$141,508	$230,311	$7,177	$21	$4,398	$4,049	$387,464
Subtotal	**$680,331**	**$1,107,274**	**$34,503**	**$101**	**$21,146**	**$19,468**	**$1,862,822**
2041	$144,338	$234,917	$7,320	$21	$4,486	$4,130	$395,213
2042	$147,225	$239,616	$7,466	$22	$4,576	$4,213	$403,118
2043	$150,169	$244,408	$7,616	$22	$4,667	$4,297	$411,180
2044	$153,172	$249,296	$7,768	$23	$4,761	$4,383	$419,404
2045	$156,236	$254,282	$7,923	$23	$4,856	$4,471	$427,792

Table 3-6. City and County Highway Fund Revenue Summary (COVID-19 Adjusted Base Case, 2021 to 2045 total in thousands)

Fiscal Year (ending June 30)	Taxes	Licenses and Permits	Charges for Services	Fines and Forfeits	Reimburse-ments and Recoveries	Others	Total
Subtotal	$751,140	$1,222,520	$38,094	$112	$23,347	$21,494	$2,056,706
Total	$5,427,372	$8,833,333	$275,248	$808	$168,691	$155,307	$14,860,759

In addition to City and County Highway Funds, the City receives significant contributions of funding from two other sources: OTS revenues, which are mostly operating and capital grants, and the PTSF, which is primarily composed of transit fare collections, and was created for the management, operation, and maintenance of the bus transportation system, including the City bus system (TheBus) and the special transit service (TheHandi-Van).

The PTSF (pre-COVID-19) forecast was prepared using the HART Revised Recovery Plan of 2018 transit fare forecast for the years FY 2021 through FY 2036, and then extending this to FY 2045 to fill the required forecast period. As transit fare collections are anticipated to increase dramatically upon the full service opening of the Honolulu rail system in FY 2026, the percent of average annual fare collections in the period of FY 2029 through FY 2036 was used to predict escalation amounts for the years FY 2037 to FY 2045.

The PTSF forecast (COVID-19 adjusted base case) was determined using actual fare collections during FY 2017 through FY 2019, and adjusting the pre-COVID-19 forecast based on those actuals. COVID-19 impacts for the years FY 2020 through FY 2028 were determined using percentages of actual ridership changes during the COVID-19 influenced months of April through November 2020 and COVID-19 impact forecasts for the State Rental Vehicle Surcharge Tax from HDOT. From FY 2029 to FY 2045, fare revenue increases are based on the HART Revised Recovery Plan of 2018 forecasted fare revenues, shifting percentages of fare increases to those anticipated to coincide with opening of the full rail system in FY 2029.

As fare revenues may be significantly impacted by external factors, including fare rates set by the Honolulu Fare Commission, HART's dates of commencement of interim and full service openings, and further possible disruptions of both rail construction and transit ridership due to COVID-19, PTSF forecasts should be revisited as external changes are realized.

In addition, it is common practice of the City and County to supplement operating budgets for transit O&M with General Funds. Further, City Council Resolution 19-10 of 2019 sets the farebox recovery rate for TheBus at 25 percent to 30 percent, with the balance of the operating costs to be paid by the City Highway Fund and General Fund. As the OahuMPO does list projects related to transit O&M in its ORTP, the project team requested the inclusion of anticipated General Fund expenditures for transit O&M. The General Fund expenditure forecast was derived by using the HART Revised Recovery Plan of 2018, Moderate Scenario O&M Forecast as a baseline. As the HART O&M forecast covers the years FY 2017 through FY 2036, this baseline period was updated with actual budgeted amounts for FY 2017 through FY 2021[1] and then extended from FY 2037 to FY 2045 to fill the required forecast period. As the City and County subsidy for transit O&M includes both General Fund and Highway Fund portions, the average annual percentage of General Fund was determined to be 88 percent using historic actuals from City operating budgets. It is unclear at this time whether the annual General Fund percentage of the transit subsidies will be significantly affected by addition of O&M budget requirements related to the openings of interim and full rail service.

[1] From the City and County of Honolulu Operating Budgets, FY 2017 through FY 2021.

Pre-COVID General Fund subsidy for transit O&M was determined using the HART Revised Recovery Plan of 2018, Moderate Scenario O&M Forecast as a baseline, and adjusting the year FY 2021 subsidies for TheBus and TheHandi-Van using the actual amounts from the FY 2021 City operating budget.

The COVID-19 impacts to the General Fund subsidy for transit O&M was determined by delaying for 1 fiscal year the O&M budget increases associated with rail interim opening, and delaying for 3 fiscal years the opening of rail full service. At time of the writing of this report, O&M transit budgets in Honolulu have not otherwise been significantly impacted by the COVID-19 pandemic (that is, there has been no O&M reduction based on reduction of service or furloughed workers or similar).

Table 3-7a shows the pre- and post-COVID-19 totals of the City Highway Fund, PTSF, and transit O&M.

Table 3-7a. City and County Major Transportation-Related Revenue Summary

City Revenues	Pre-COVID	Estimated Impact due to COVID-19	Base Case COVID-19 Revenue Impact Forecast
PTSF	$3,991	($1,352)	$2,639
City General Fund Subsidy for Transit O&M	$12,448	($573)	$11,875
Total	**$16,439**	**($1,925)**	**$14,514**

PTSF revenues and City General Fund subsidies of transit O&M supplement the Highway Fund revenues, as shown in Table 3-7b.

Table 3-7b. City and County Major Transportation-Related Revenue Summary (COVID-19 Adjusted Base Case, Five-Year Aggregation in Millions)

City Revenues	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045	TOTALS
Highway Fund	$1,319	$1,533	$1,687	$1,863	$2,057	$8,459
General Fund Subsidy for Transit O&M	$1,256	$1,872	$2,367	$2,907	$3,474	$11,875
PTSF	$294	$429	$568	$656	$693	$2,639
City and County of Honolulu TOTAL	**$2,868**	**$3,833**	**$4,622**	**$5,426**	**$6,224**	**$22,973**

Note: Differences due to rounding.

It should be noted that according to the City and County's financial statements, the major sources of tax revenues to the Highway Fund are gross receipts business taxes (including public utility franchise tax) and selective sales and use taxes (including fuel tax). Furthermore, according to the City and County's financial statements, majority of the licenses and permits revenue is from motor vehicle licenses and fees. At the same time, the licenses and permits revenues also include some other items, such as other vehicle licenses and fees, street and sidewalk use, freight curb and passenger loading zone permits, and excavation and repair of streets and sidewalks.

3.3.3 Anticipated Uncommitted Revenues

This section provides estimates of likely available future revenues for ORTP 2045 projects and programs during FY 2021 through FY 2045. Table 3-8 provides summary revenue projections for ORTP 2045 revenues from traditional federal, State, and City revenue sources. It is estimated that approximately $20 billion in revenues will be available for ORTP 2045 projects and programs; all amounts are expressed in year of expenditure (YOE) dollars. The reason for using YOE is that long-range estimates of transportation costs could understate the deficit between costs and revenues. Therefore, converting revenues to YOE dollars theoretically presents a more accurate picture of revenues. To account for some growth and uncertainty, the consulting team has escalated revenues at a 0.4 percent annual growth factor according to information provided by HDOT.

As a next step and follow-up to this revenue forecast, OahuMPO will perform a detailed cost and expense planning analysis as part of the budgeting process, which together with this forecast will result in a constrained budget.

To estimate the 2021-2045 revenue, the consultant team relied on 2020 FHWA and FTA apportionments and allocations, which were then escalated at 2 percent annually for the base case and summed to arrive at the total over the term. The State and City and County sources were escalated at 0.4 percent according to information provided by HDOT fiscal office, although the source documents included FY 2018 and FY 2019 financial statements.

There may be opportunities for Oahu to increase its capital funding through use of alternative funding and financing options, as described in Section 4 of this report. As discussed within this report, it is recognized that the current economic crisis and any future reauthorization of federal surface transportation program funding creates significant uncertainty in forecasting future revenues. It is also unclear whether the federal tax sources that feed into the Highway Transportation Fund will be able to support future expenditure levels.

As shown in Table 3-8, a variety of different revenue sources are currently used finance the transportation system on Oahu and in Hawaii. Revenue projections are used to estimate the level of investment Oahu can reasonably afford. The purpose of these projections is to ensure the long-term capability of Oahu to fund transportation projects and programs. More detailed projections at project and program level will be provided in the ORTP 2045 in accordance with the OahuMPO's adopted ORTP policies and procedures.

Table 3-8 provides a summary of the revenue from FHWA, the State, and the City.

Table 3-8. Major Transportation-Related Forecast Gross Revenue Summary for Oahu (COVID-19 Adjusted Base Case, Five-year Aggregations in millions)

Revenue Source	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045	TOTAL
FHWA	$465	$513	$567	$626	$691	$2,861
FTA	$195	$215	$237	$262	$289	$1,197
State: Oahu Share	$1,169	$1,294	$1,384	$1,487	$1,601	$6,936

Revenue Source	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045	TOTAL
City	$2,868	$3,833	$4,622	$5,426	$6,224	$22,973
TOTALS	**$4,697**	**$5,855**	**$6,810**	**$7,800**	**$8,805**	**$33,967**

Note: Differences due to rounding.

3.4 Revenue Model Sensitivity Scenarios

As noted in Section 3.3.2, which summarized the major transportation revenue projections based on information provided by the State of Hawaii and the Highway Fund revenue projections for the City and County of Honolulu, the COVID-19 crisis is impacting tax revenues. To test the sensitivity of revenue projection assumptions, the following scenarios are evaluated:

- **Pre-COVID**: This scenario attempts to estimate revenues based on conditions prior to the COVID-19 crisis. For this scenario, revenues for the State of Hawaii and City and County of Honolulu assume a 2 percent annual growth rate. For the pre-COVID scenario, the State of Hawaii Highway revenues for the period FY 2021 to FY 2045 are $12.2 billion. The estimate for the same period for City and County Highway Fund is $8.8 billion.
- **Base Case for Recovery**: This scenario is based on the estimated revenue impacts of COVID-19, as developed by the State of Hawaii. The annual growth rates based on State of Hawaii estimates were applied to City and County Highway Fund revenues, as presented in Tables 2-3 and Table 2-4 for the State and City, respectively. For the base case scenario, the State of Hawaii major transportation-related tax revenues for the period FY 2021 to FY 2045 are estimated to be $11.3 billion. The estimate for the same period for the City and County Highway Fund is $8.1 billion. In comparison to pre-COVID conditions, this is a decrease of approximately 7 percent of the pre-COVID estimates for both the State of Hawaii and City and County of Honolulu.
- **Pessimistic**: This scenario evaluates conditions if the annual growth rates resulting from the COVID-19 crisis are lower than the base case. In other words, this case portrays what we might anticipate for revenues if the recovery takes longer than anticipated in the base case. This scenario considers the following: what if annual growth rates are 20 percent lower than the base case. For the pessimistic scenario, the projected State of Hawaii Highway revenues for the period FY 2021 to FY 2045 are $10.1 billion. The estimate for the same period for the City and County Highway Fund is $7.4 billion.
- **Optimistic**: This scenario evaluates conditions if the annual growth rates resulting from the COVID-19 crisis are higher than the base case; in other words, projected revenues are higher than expected. This scenario considers the following: what if annual growth rates are 5 percent better than the base case. For the optimistic scenario, the State of Hawaii Highway revenues for the period FY 2021 to FY 2045 are $11.6 billion. The estimate for the same period for the City and County Highway Fund is $8.3 billion.

Figures 3-5 and 3-6 summarize the sensitivities for total major transportation tax revenues for the State of Hawaii and Oahu's share, respectively. Similarly, Figures 3-7 and 3-8 show the sensitivities for forecasted annual major transportation tax revenues for the State of Hawaii and Oahu's share, respectively. Figures 3-9 and 3-10 summarize the revenue sensitivities for the City and County Highway Fund.

Figure 3-5. State of Hawaii Total Revenue Forecast Sensitivity Scenario Results

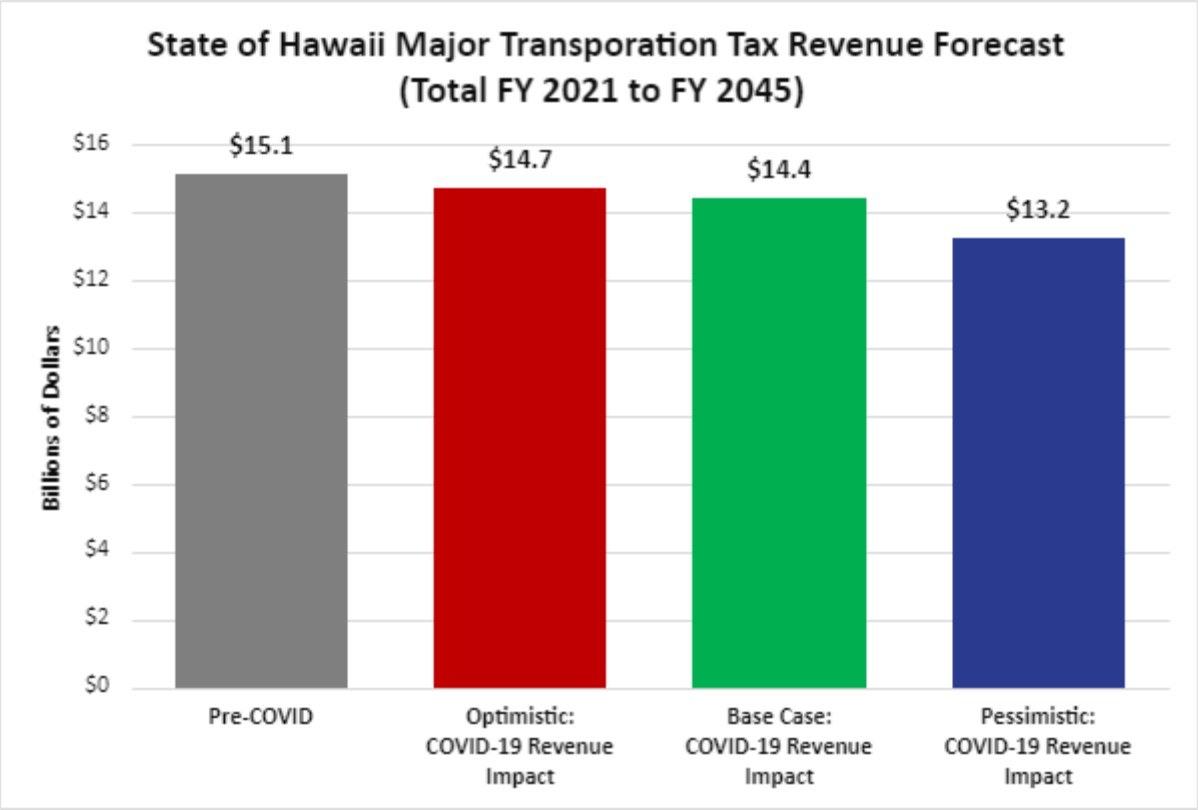


Figure 3-6. Oahu Share of Total Major Transportation Tax Revenue Forecast Sensitivity Scenario Results

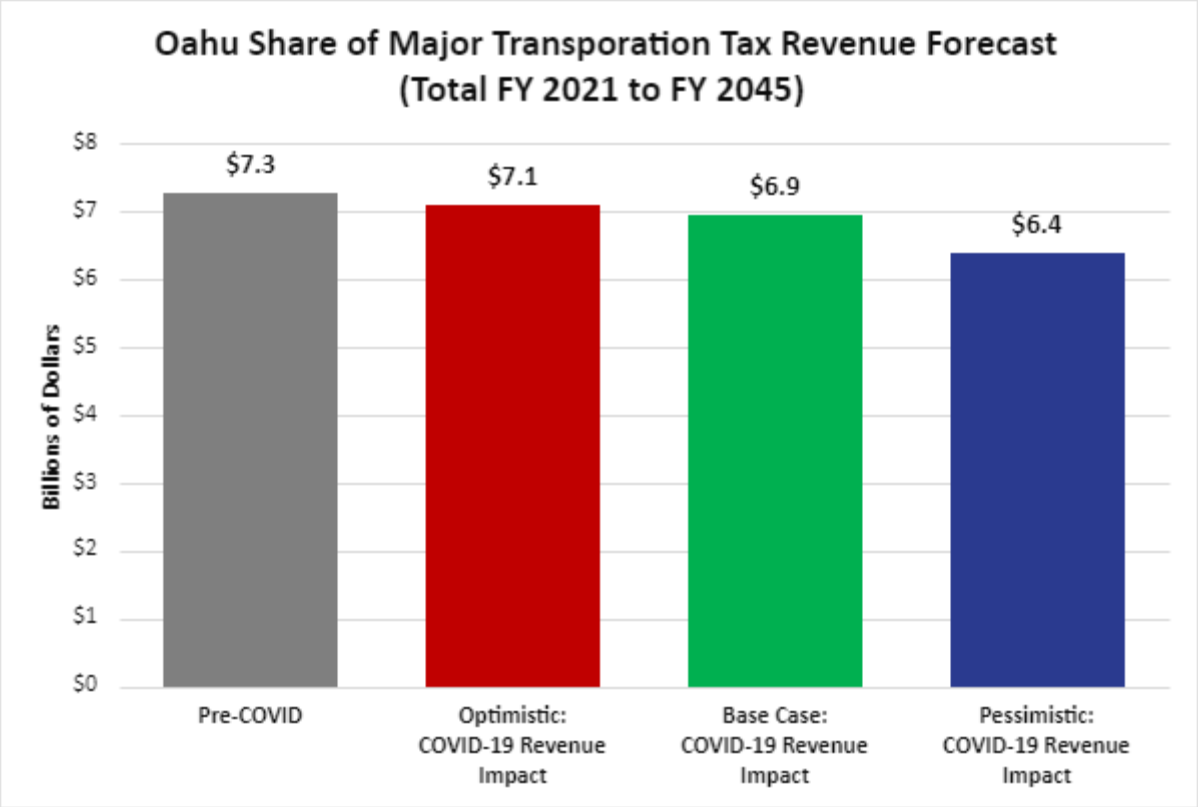


Figure 3-7. State of Hawaii Major Transportation Annual Tax Revenue Forecast Sensitivity Scenario Results

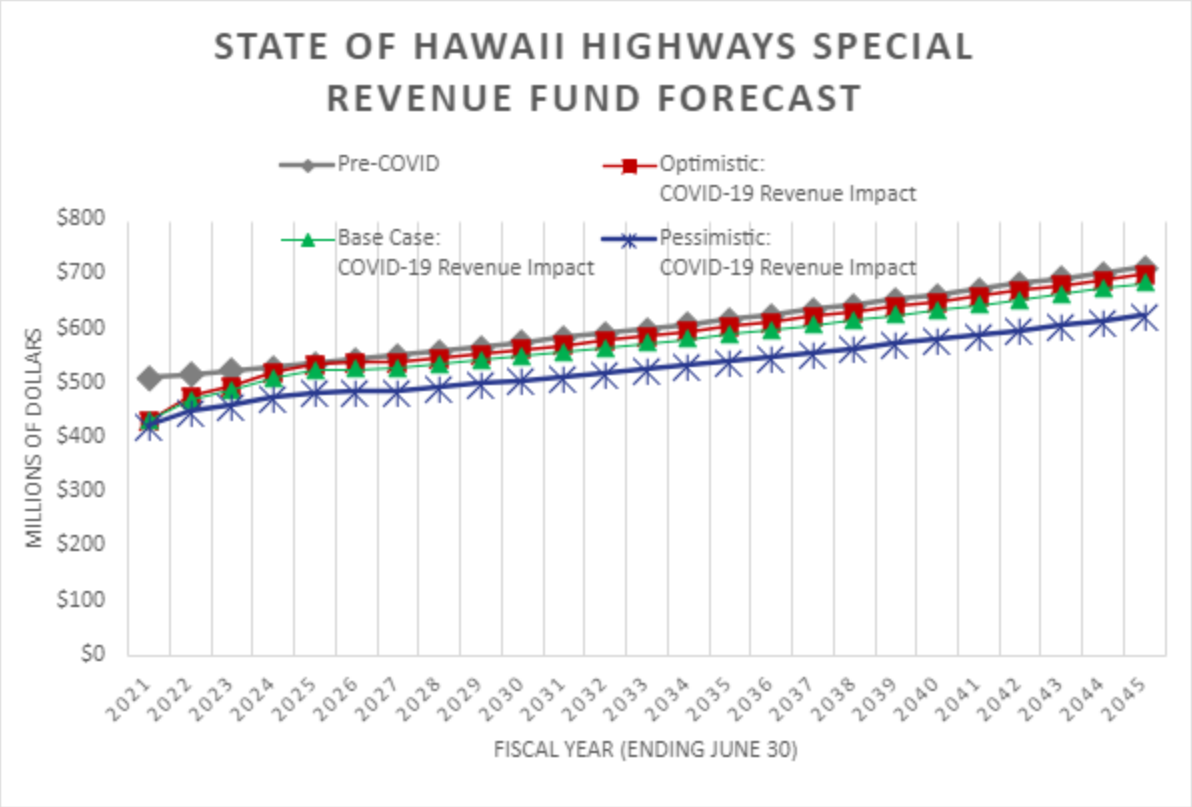


Figure 3-8. Oahu Only Portion of Major Transportation Annual Tax Revenue Forecast Sensitivity Scenario Results

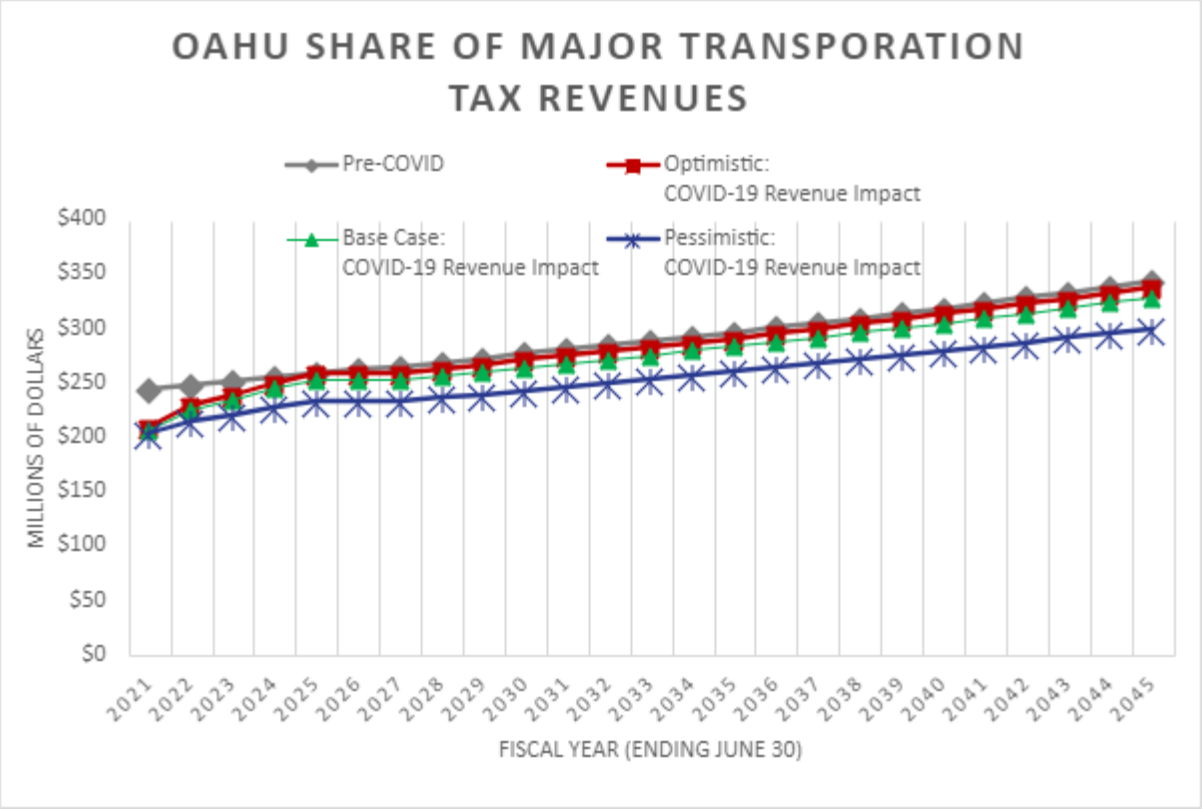


Figure 3-9. City and County of Honolulu Total Revenue Forecast Sensitivity Scenario Results

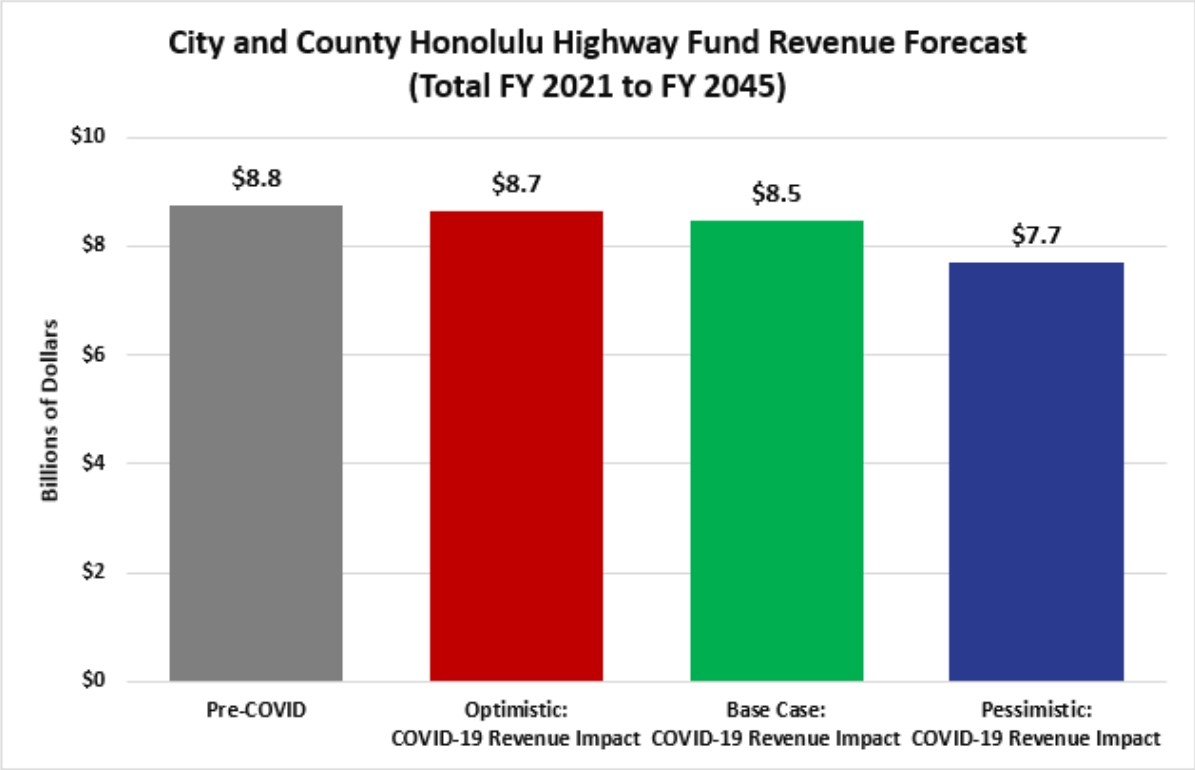
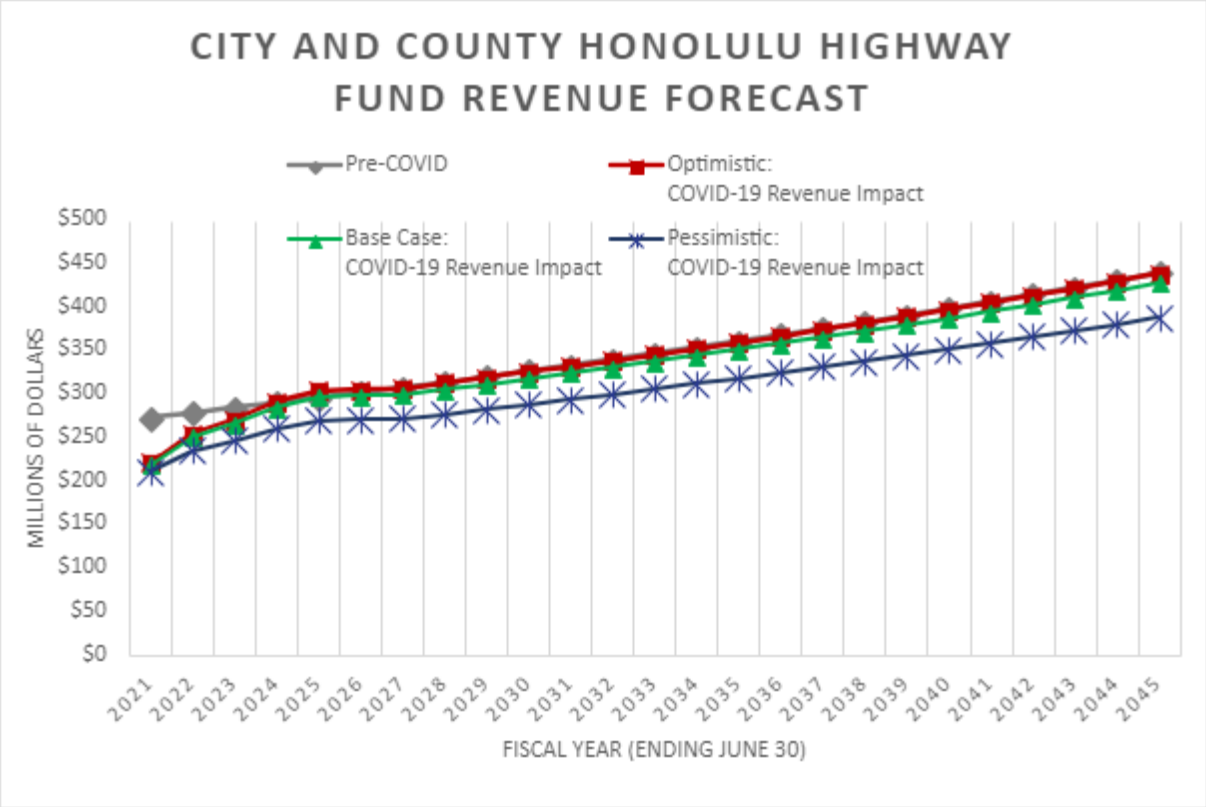


Figure 3-10. City and County of Honolulu Annual Revenue Forecast Sensitivity Scenario Results



3.5 Uses of Revenues

3.5.1 State of Hawaii

Revenues generated from taxes and non-tax sources are used for highway O&M and debt service on revenues bonds issued to finance highway capital projects. Tax revenues from vehicle weight and vehicle registration tax, liquid fuel tax, and rental motor vehicle surcharge tax are considered pledge revenues used to pay the debt service on outstanding State highway revenues bonds. Currently, there are nine outstanding highway revenues bonds with maturity dates range from 2021 to 2036. The State of Hawaii's FY 2019 CAFR shows that the balance on outstanding highway revenues is approximately $380 million as of June 30, 2019. During the period FY 2010 to FY 2019, the average annual debt service on highway revenues was approximately $51 million; the FY 2019 annual debt service was approximately $61 million. The Official Statement for State of Hawaii Highway Revenue Bonds Series 2019A shows that the total projected debt service for the period FY 2021 to FY 2040 is $602 million. The projected annual debt service ranges from approximately $51 million in FY 2021 to approximately $7 million in FY 2040. It is likely that the State will issue additional highway revenue bonds and the projected debt service would increase. Table 3-9 summarizes the sources and uses of revenues for the planning period FY 2021 to FY 2045.

3.5.2 City and County Honolulu

Revenues generated from taxes and non-tax sources are used for highway and transit systems O&M and for debt service. The City and County of Honolulu has issued General Obligations (GO) bonds and the proceeds are used to finance capital projects related to highways, public transportation system, and HART. For the highway and street projects, related debt service costs associated with GO bonds are reimbursed by the Highway Fund. For FY 2019, approximately $118 million was transferred from the Highway Fund to the General Fund for debt service costs. For purposes of this study, it is assumed that the debt service for related highway projects is assumed to increase 2 percent per year. The average annual debt service FY 2019 to FY 2021 is $126 million; this is escalated at 2 percent per year to estimate the projected annual debt service. In total, the estimated debt service is approximately $4 billion for the period FY 2021 to FY 2045. Table 3-9 summarizes the sources and uses of revenues for the planning period FY 2021 to FY 2045.

Table 3-9. Summary of Sources and Uses of Revenues FY 2021 to FY 2045 (amounts in billions)

Owner	Revenue Source	Pre-COVID Conditions	Optimistic Case for Recovery	Base Case for Recovery	Pessimistic Case for Recovery
State	Total Revenues	$15.1	$14.7	$14.4	$13.2
State	Total Debt Service [a]	($0.8)	($0.8)	($0.8)	($0.8)
State	Available to State	$14.3	$13.9	$13.6	$12.5
State	Oahu Share	$6.9	$6.7	$6.6	$6.0
City and County	Revenues [b]	$25.2	$23.2	$23.0	$22.2
City and County	Debt Service ©	($4.1)	($4.1)	($4.1)	($4.1)
City and County	Uncommitted Totals	$21.1	$19.1	$18.9	$18.2

[a] Total existing debt service (principal and interest) FY 2021 to FY 2040 based on outstanding obligations as of June 30, 2019, plus projected debt assuming $25 million every 3 years at 4% interest and 20-year term. Does not include cost of issuance or bond reserve.

[b] Includes City and County of Honolulu Highway Fund, PTSF, General Fund Subsidy for Transit O&M.

© For the purposes of this study, it is assumed that the debt service (principal and interest) for related highway projects is assumed to increase 2% per year. The average annual debt service FY 2019 to FY 2021 is $126 million; this is escalated at 2% per year to estimate the projected annual debt service.

4 Future Funding Strategies

The purpose of this is section to present and describe alternative transportation funding. The unique challenges and features specific to transportation funding and financing warrant a deeper examination of funding strategies. Options for funding and financing strategies were analyzed on a project or program basis. The consultant team provided OahuMPO with an account of funding options that have been implemented elsewhere or have been proposed but not yet adopted. The funding options included tried and true methods such as fuels taxes and license fees, as well as more novel options such as user fees, P3 financing, and the use of emerging technologies for revenue generation. The deliverables from this effort could assist decision-makers in identifying policies and practices that could augment the current fuel-tax-revenue system and aid in identifying state laws and practices that permit a more sustainable funding model.

Funding and financing sources currently in use by U.S. authorities generally fall into eight major categories, including operating revenue sources, non-operating revenue sources, value capture sources, federal sources, state and regional sources, local taxation funding, partner agency sources, and private financing. This memo introduces each source for consideration by OahuMPO; some of the sources may be new to OahuMPO, while others may be familiar.

It should be noted that while not all sources of funding and financing provided herein are currently applicable within the State of Hawaii, a description of the sources is provided to the benefit of OahuMPO's global understanding of transportation funding and financing. Some sources, despite not being currently available, could be developed in Hawaii subject to further detailed analysis and stakeholder engagement.

4.1 Operating Sources

Operating revenue is generated from a company's primary business activities. For transportation projects, that includes income generated from day-to-day highway, street, or other transportation operations (such as public transit). Key funding considerations include demand risk, configuration, and modal competition, as well as other considerations.

4.1.1 Fareboxes

Farebox revenue is a subset of transport revenue generated through fares paid by passengers for use of a public transport system. Fare structures can either be a flat rate or a variable rate; a flat rate fare structure is adopted if users pay a fixed fare regardless of the time of day or travel distance, while under a variable rate structure, the fare paid by users depends on predefined factors such as time, distance, or zones. The rationale behind adopting a variable rate structure is to better align the fare that transit riders pay with the marginal cost of providing the transit ride, which ultimately maximizes farebox recovery as a percentage of capital and operating costs.

The FY 2018 financial statements for the City and County of Honolulu show passenger fare revenue for transit services in the approximate amount of $56 million dollars.

4.1.2 Advertising

Advertising revenue could be a potential source of revenue despite state restrictions. The revenue is typically generated by selling advertising space on transit or other transportation infrastructure to businesses in exchange for a minimum guaranteed annual revenue flow and, in some cases, a share of net revenues above an agreed-upon minimum threshold. Advertising space examples include shelters, stations, transit vehicles (within and exterior), floor space, rest stops, and fare collection infrastructure. As an example, the GEICO insurance company currently sponsors rest areas in the state of Virginia. Informational road signs display

"REST AREA, sponsored by GEICO" in exchange for an advertising fee that is collected by the Virginia Department of Transportation.

4.1.3 Naming Rights

From a transportation standpoint, revenue generated from naming rights is typically collected by selling the right to name a station or other transportation asset to a private entity in exchange for a fee paid to the transportation authority. The selling of naming rights is especially common within the professional sports industry; most professional sports arenas, stadiums, fields, and tracks are publicly owned and have been renamed by banking, telecommunications, and other private firms. For example, MetLife Inc. pays $16 million a year to name the football stadium used by the New York Giants and Jets, and Citibank and AT&T pay $20 million a year for the stadiums used by New York Mets and the Dallas Cowboy, respectively.

Despite restrictions, sale or lease of naming rights could be an alternative means to generate revenue for transportation agencies looking for new sources of funding other than taxes and fees however this source should be designed with extensive stakeholder engagement.

4.1.4 Station Revenues

Station revenues typically include revenue generated from consumer food purchases, in-station retail, ATM fees, tourists, and other vendors at transit stations. However, of importance and one of the key sources of station revenue for transit agencies is in-station retail. Typically, the revenue generated from in-station retail is minimal when compared to farebox revenue; however, it is still considered to be significant and can encompass a strong growth potential. One unique example is Hong Kong's Mass Transit Railway; famous for integrating development into and around transit stations, their in-station retail generates approximately $270 million annually for the agency. We understand retail at stations is not allowable under the rail Environmental Impact Statement, but we are providing this source example from other jurisdictions.

4.1.5 Special Situations

Special situation revenues include fares collected from such sources as those with special needs, such as TheHandi-Van. While services may operate at a net loss, revenue is still generated as cash flow through services that supplement fixed-route mass transit by providing individualized rides without fixed routes or timetables. The services may vary considerably on the degree of flexibility they provide to their customers. At their simplest, they may consist of a taxi or small bus that runs along a more or less defined route and then stops to pick up or discharge passengers on request. At the other end of the spectrum—fully demand responsive transport—the most flexible paratransit systems offer on-demand, call-up, door-to-door service from any origin to any destination in a service area. It is worth noting that while many special situations services do produce revenue, many also function at a net loss, as these services are often funded as social benefits.

4.1.6 Parking

Parking revenue is generated through the collection of parking fees charged to individuals who park their vehicles on public or private lands. The island of Oahu has parking bylaws and enforcement in place to generate parking revenue, though opportunities exist for a more rigorous parking enforcement program and the installation of more smart meters as part of the Honolulu Urban Core Parking Master Plan (2011). The plan cites that after the city of San Francisco installed smart meters, they saw a 23 percent decrease in meter related citations. As of February 2019, the parking rate at on-street metered stalls on Oahu increased. The rates for smart meters in the Honolulu urban core and Waikiki increased to $3 an hour from $1.50 an hour. These rates do not apply to electric vehicles. A study looking at the impact of the rise of electric car

ownership on State and City parking revenues, might be useful in reviewing related State and City parking laws and potential revenue loss.

4.2 Non-Operating Sources

Non-operating revenue is the income generated from sources not directly linked to day-to-day highway and street operations. A key consideration is the type of source; for example, rental income and investment income generate minimal revenue, while government revenue grants and vehicle registration fees could provide a credible revenue stream.

4.2.1 Government Revenue Grants and Subsidies

Governments typically provide assistance to authorities via grants or subsidies in exchange for promoting an economic or social benefit to the community. Approximately $168 million in annual federal aid is passed through to the HDOT and the OahuMPO.

4.2.2 Rental Income

Rental income revenue is income from leased properties that is generated periodically through rental payments made by the respective tenants. The FY 2018 State of Hawaii financial statement shows that the State generated rental income in the amount of approximately $35 million dollars as part of non-tax revenues. The source also shows that the State generated airport rental income in the amount of approximately $153 million dollars and ports rental income in the amount of approximately $28 million dollars. In addition, the FY 2018 City and County of Honolulu financial statement shows that the City and County government generated housing rental income in the amount of approximately $10 million dollars. However, for the City and County, the rental income is part of the operating revenue that goes to the island's housing fund.

4.2.3 Investment Income

Investment income revenue is income generated from investments in securities, funds, and similar. The FY 2018 State of Hawaii financial statement shows that the State has interest and investment income in the amount of approximately $37 million dollars as part of non-tax revenues. The FY 2018 City and County of Honolulu financial statement shows that the City has BWS program investment earnings in the amount of approximately $6 million dollars and HART program investment earnings in the amount of approximately $2 million dollars. The use of such funds may be restricted and limited in scope.

4.2.4 Vehicle Registration Fees

Vehicle registration fees include fees for registering motor vehicles within a specific jurisdiction. The FY 2018 State of Hawaii financial statement shows that the State has generated vehicle weight and registration tax income in the amount of approximately $135 million dollars as part of their major tax revenues.

4.3 Value Capture Sources

Value capture is a funding source tied to the value of real estate within a predefined vicinity of the transit infrastructure. In value capture scenarios, public transit agencies attempt to capture some of the increases to the value of private land that resulted from the provision of transit services. Because value capture is linked to real estate valuation, a key consideration for this funding source is the cyclical nature of the real estate market and the accompanying risks of revenue variability. Other considerations include the time it could take to structure and entitle a project with multiple real estate developers.

Transportation networks and urban land values are closely linked. Transportation improvements increase accessibility and thereby make surrounding locations more desirable. Transportation improvements often increase the value of nearby land, benefiting landowners and developers. Value capture techniques harness a portion of the increased property values to pay for the improvement or for future transportation investment. While value capture techniques are used more commonly for transit projects, they are also used to fund highway improvements. There are several different forms of value capture used in the U.S. The most common include air rights, impact fees, joint development, land value tax, negotiated exactions, sales tax districts, special assessments, tax increment finance, capital leasing, and transportation utility fees.

4.3.1 Transit-oriented Development

Transit-oriented development, or TOD, includes a mix of commercial, residential, office and entertainment centered around or located near a transit station. Dense, walkable, mixed-use development near transit attracts people and typically creates sustainable connected communities that provide a convenient, affordable, and active lifestyle. TOD along with careful planning and zoning, could provide funding directly linked to private real estate development activity within the vicinity of transit. For example, lease revenue from commercial operations, income tax generated from increased commercial activity, or both could be used to fund transit-related expenditures.

There are two broad types of TOD, both of which are developed around transit systems: urban and neighborhood. Urban TOD is in or near city centers in close proximity to light rail, heavy rail, or express bus routes. They feature high density residential and commercial developments and employment clusters. Neighborhood TOD is located along the feeder lines or bus routes further away from the urban core. While neighborhood TOD also feature mixed residential commercial uses, densities are not normally as high as urban TOD.

4.3.2 Joint Development

Joint development is the simultaneous improvement of a transit system and the surrounding real estate, coordinated between the transit authority and real estate developers. Transit authorities actively participate in joint development by contributing either property or funding in exchange for system improvements, a share of the development revenues generated, or a combination thereof. Under certain circumstances and when the joint development meets federal standards, authorities can avoid repaying federalized portions of their contributed assets. More specifically, joint development projects involve the following:

- Integrated development of transit and non-transit improvements, with transit projects physically or functionally related to commercial, residential, or mixed-use development.
- Public and private investments that are coordinated between transit agencies and developers to improve land owned by a transit agency or related to a transit improvement.
- Mutual benefit and shared cost among all parties involved.

An example of a joint development includes a scenario where a transit agency partners with a developer to construct a mix-use development that is connected to a new light rail transit station, raising revenue for the transit system in the process. Typically, private or public entities provide land, assets, or funding to support development near a station.

4.3.3 Air Rights

Air rights revenue includes the sale or lease of air rights above transit stations (or other public facilities) to private developers to build commercial or residential development above transportation infrastructure. The sale of air rights supports TOD and allows for increases in office and residential densities and the use of

public transportation. Air rights projects usually are associated with transit stations, where the development may occur directly above the transit station or on nearby parcels. However, they can also be associated with freeway or roadway projects. A few notable air rights projects completed to date include above Interstate (I) 5 in Seattle, Washington, I-35 in Duluth, Minnesota, I-670 in Columbus, Ohio, and FDR Drive in New York City. An example of sourcing funds by selling air rights owned by a transit authority to developers for commercial development in New York City is presented in Section 4.1.3.

4.3.4 Right-of-way Use Agreements

Private or public entities provide land, assets, or funding to support development near right-of-way (ROW). ROW Use Agreements are a form of value capture that involve the sale or lease of development above, below, or adjacent to transportation ROW or real properties. In active real estate markets, development rights are often transferred from historic properties to nearby properties. This practice can also be applied with highway or transit ROW. When this is the case, new developments are often built on platforms erected above the highway or transit facility or in caverns excavated below them. While there is added cost in making these preparations, ROW Use Agreements associated with transit or highway facilities are often attractive to investors because they enable the construction of new development in prime, city-center locations without demolishing other properties or displacing current residents. These opportunities create new development sites in urban core locations that would not otherwise be able to support new construction.

4.3.5 Tax Increment Finance Districts

Tax increment financing (TIF) includes creating special tax districts around targeted redevelopment areas from which future tax revenues are diverted to finance infrastructure improvements or development. It is a value capture revenue tool that uses taxes on future gains in real estate values to pay for new infrastructure improvements. TIFs are authorized by state law in nearly all 50 states and begin with the designation of a geographic area as a TIF district. Plans for specific improvements within the TIF district are developed. The TIF creates funding for public or private projects by borrowing against the future increase in these property tax revenues. The intent is for the improvement to enhance the value of existing properties and encourage new development in the district. TIF districts are usually established for a period of 20 to 25 years, during which time all incremental real estate tax revenues above the base rate at the time the district is established flow into the TIF. There is no precedent of TIF in Hawaii, and there may be legislative hurdles to overcome. In light of these constraints, and given the availability of other potential sources, the utility of a TIF is something that will need to be considered over the long- or medium term.

4.3.6 Ad Valorem Tax (Property Taxes)

Ad valorem tax is based on the value of a property sale or purchase transaction and it can be used as a means of value capture revenue sources. An ad valorem tax is a tax based on the assessed value of an item, such as real estate or personal property. The most common ad valorem taxes are property taxes levied on real estate. Property ad valorem taxes are usually levied by a municipality but may also be levied by other local government entities such as counties, school districts or special taxing districts, also known as special purpose districts. Property owners may be subject to ad valorem taxes levied by more than one entity, such as both a municipality and a county. Ad valorem property taxes are typically a major revenue source for both state and municipal governments, and municipal property ad valorem taxes are commonly referred to as simply property taxes.

4.3.7 Impact Fee

An impact fee is a fee that is imposed by a local government on a new or proposed development project to pay for all or a portion of the costs of providing public services to the new development. Impact fees are a charge on new development to help fund and pay for the construction or needed expansion of offsite capital

improvements. These fees are usually implemented to help reduce the economic burden on local jurisdictions that are trying to deal with population growth within the area. For example, San Francisco has a transit impact development fee that was passed in 1981 and designed to recover the operating subsidy and capital expansion costs of the San Francisco Municipal Railway (MUNI). In Hawaii, impact fees are imposed on developers, especially around zoning change applications, through unilateral agreements, for example the Ewa impact fees for traffic and roadway improvements.

4.3.8 Asset Monetization

Asset monetization refers to the sale (or long-term leaseback) of assets (that is, property) to another party in exchange for funds. In the case where the public sector sells infrastructure, the infrastructure is transferred on a freehold basis with the requirement that it will be used for its initial purpose unless an agreement was negotiated whereby the outcome is an abandonment of the infrastructure. This is typically the case when infrastructure is obsolete, and it is more efficient to rebuild at another more suitable site. In the case where the public sector leases infrastructure, a concession agreement is executed which commonly takes the form of a long-term lease with the requirement that the concessionaire maintains, upgrades, and builds infrastructure and equipment.

4.4 State and Regional Sources

State and regional government sources include various programs through which funding such as grants, loans, lines of credit, and others can be sourced. These sources may be less competitive than federal sources and there may be more willingness from these sources to fund the project as a result of its local nature.

4.4.1 State Infrastructure Bank

A State Infrastructure Bank (SIB), much like a private bank, can offer a range of financing options including loans and credit assistance enhancement products to public and private sponsors. SIBs are typically capitalized with federal-aid surface transportation funds and matching state funds. As loans or other credit assistance forms are repaid to the SIB, its initial capital is replenished and can be used to support a new cycle of projects.

4.4.2 State Block Grants

State block grant programs provide planning, capital, and operating assistance. A block grant refers to a grant-in-aid of a specified amount from the federal government to individual states and local governments to help support various broad purpose programs, such as law enforcement, social services, public health, and community development. Block grants have less oversight from the federal government and provide flexibility to each state in terms of designing and implementing programs.

4.4.3 Energy Programs

Energy programs provide funds for projects that align with national and local greenhouse gas reduction goals. For example, solar power installations can be sited on or above highway alignments and interchanges, rooftops, elevated structures above parking lots, or other Department of Transportation (DOT)-owned facilities. Solar power projects can reduce state DOT energy costs and generate new revenue streams from private-sector developers who pay to use state-owned land. They also allow DOTs to tap into other federal, state, and local incentives associated with the generation of clean, renewable electric power.

4.4.4 Usage Tolls and Vehicle Miles Traveled (VMT) Toll or Fee

The usage tolls funding mechanism is a source of funding derived from road tolls to replace or supplement the fuel tax. The VMT toll or VMT fee, mileage-based fee, or road user charge is a policy of charging motorists based on how many miles they have traveled. It has been proposed in various states as an infrastructure funding mechanism to replace or supplement the fuel tax, which has been generating billions less in revenue each year due to increasingly fuel-efficient vehicles. A VMT fee currently exists as part of a limited program for 5,000 volunteers in Oregon and for trucks in Illinois. Currently, no toll roads exist in Hawaii. However, Hawaii has a begun a Road Usage Charge Demonstration pilot project that is meant to assess whether there is an opportunity to replace the fuel tax with a per-mile-road-usage charge for future roadway funding. The department was awarded a $4 million grant from the FHWA for research over a 36-month period.

4.5 Federal Sources

Federal government sources include various programs through which funding such as grants, loans, lines of credit, and others can be sourced. A key consideration here is that programs are competitive and additional empirical analysis may be required (such as economic Benefit-Cost Analysis). I It may take time to demonstrate compliance with the various requirements for funding criteria, and additional work such as project development or engineering may be required.

4.5.1 Transportation Infrastructure Finance and Innovation Act Loans and Lines of Credit

Transportation Infrastructure Finance and Innovation Act (TIFIA) loans and lines of credit provide credit assistance for qualified projects. The program is designed to fill market gaps and leverage substantial private co-investment by providing supplemental and subordinate capital. The TIFIA program provides federal credit assistance in the form of direct loans, loan guarantees, and standby lines of credit to finance surface transportation projects of national and regional significance. TIFIA credit assistance provides improved access to capital markets, flexible repayment terms, and potentially more favorable interest rates than can be found in private capital markets for similar instruments. TIFIA can help advance qualified, large-scale projects that otherwise might be delayed or deferred because of size, complexity, or uncertainty over the timing of revenue. Many surface transportation projects — highway, transit, railroad, intermodal freight, and port access — are eligible for assistance. Each dollar of federal funds can provide up to $10 in TIFIA credit assistance and leverage $30 in transportation infrastructure investment.

4.5.2 Federal Highway Administration Private Activity Bonds (PAB)

FHWA Private Activity Bonds (PABs) are issued on behalf of local or state governments for the benefit of private users for qualifying projects. They provide tax-free returns to investors. The private entity makes repayments.

PABs are typically not backed by the credit of the public project sponsor. They are debt instruments authorized by the Secretary of Transportation and issued by a conduit issuer on behalf of a private entity for highway and freight transfer projects, allowing a private project sponsor to benefit from the lower financing costs of tax-exempt municipal bonds.

4.5.3 Better Utilizing Investments to Leverage Development (BUILD) Grants

The Better Utilizing Investments to Leverage Development (BUILD) transportation discretionary grant program, provides a unique opportunity for the U.S. Department of Transport to invest in road, rail, transit,

and port projects that promise to achieve national objectives. Previously known as Transportation Investment Generating Economic Recovery (TIGER) discretionary grants, the BUILD program has nearly $7.1 billion dedicated by Congress for 10 rounds of national infrastructure investments to fund projects that have a significant local or regional impact. It is a discretionary grant funding opportunity for state and local stakeholders.

4.5.4 Federal Transit Administration New Starts and Capital Grants

The FTA New Starts and Capital Grants program is a funding source for major transit capital investments. This FTA discretionary grant program funds such transit capital investments as heavy rail, commuter rail, light rail, streetcars, and bus rapid transit (BRT).

The New Starts Transit Program (NSTP) provides funding for local governments in developing and constructing transit projects to accommodate and manage urban growth and development. Eligible projects typically include those where the total project cost is equal to or greater than $300 million or total new starts funding sought equals or exceeds $100 million, new fixed guideway systems (such as light rail and commuter rail), extensions to an existing system, and fixed guideway BRT systems. HART receives FTA New Starts grants in support of the HRTP.

Federal transit law requires transit agencies seeking Capital Investment Grant (CIG) funding to complete a series of steps over several years. With regards to new starts and core capacity projects, the law requires the completion of project development and engineering phases in advance of receipt of a construction grant agreement. The law also requires projects to be rated by the FTA at various points in the process according to statutory criteria evaluating project justification and local financial commitment. HDOT is an eligible recipient of certain discretionary allocations from FTA for specific projects. Discretionary funds can be transferred to a project on Oahu at HDOT's discretion. The City is a designated recipient of formula apportionments and can also receive discretionary federal allocations from certain programs for specific projects.

4.5.5 Federal Highway Administration Funds

FHWA funds are made available for projects as they relate to surface transportation, congestion mitigation, and air quality improvement. The FHWA provides funding for programs that include the following:

- Federal-aid programs, such as the Emergency Relief (ER) Program, the National Highway Performance Program (NHPP), the Surface Transportation Block Grant Program (STBG), or the Appalachian Development Highway System (ADHS).
- Special federal-aid funding, such as congressionally designated projects, discretionary programs, transportation improvement projects.
- The Office of Planning, Environment, and Realty federal-aid funding programs.
- Federal and Indian lands funding.

4.6 Local Taxation Funding Sources

Local taxation funding sources are typically those imposed by local government, such as a city or municipality. Key considerations include political risks and local voter approval, as increases in taxation may be unpopular, they can be successfully implemented if done correctly. This section summarizes local taxation sources.

4.6.1 Special Tax Assessment Districts

Special Tax Assessment Districts are identified to collect tax based on a measurable unit (such as property square footage) within a pre-determined vicinity of a station or corridor. It is used to designate a unique charge that government units can assess against real estate parcels for certain public projects. This charge is levied in a specific geographic area known as a special assessment district. A special assessment may only be levied against parcels of real estate which have been identified as having received a direct and unique benefit from the public project. For example, a Sidewalk Improvement District was formed to address gaps in the sidewalk infrastructure and connectivity. An example of such improvement districts includes the Waikiki Beach Special Improvement District.

4.6.2 Local Option Gas Tax (LOGT)

A local option gas tax (LOGT) is a type of levy on fuel purchase. In Hawaii, each county levies its own motor fuel tax. The FY 2018 State of Hawaii financial statement shows that the State generated liquid fuel tax income in the amount of approximately $85 million dollars as part of the major tax revenues and generated aviation fuel tax in the amount of approximately $3 million dollars as part of the aviation fund revenues. The growth of electric vehicles may result in lower gas tax revenue over the long term; however, it is currently unclear what this impact and risk could be. In addition, any future decline in gas tax may be augmented with new taxes to enable a consistent funding stream.

4.6.3 Surtax

A surtax is a fixed price tax levied on top of another tax or income for specific planned projects. For example, the FY 2018 State of Hawaii financial statement shows that the State generated rental motor and vehicle surcharge tax income in the amount of approximately $55 million dollars as part of the governmental funds revenues. In addition, the HART systems collected $223 million dollars from a county surcharge on the state GET, according to the HART 2017 independent financial audit.

4.6.4 Local Sales Tax

This refers to the special or additional sales tax to fund local infrastructure development (not limited to transportation). Sales tax districts are primarily a form of special assessment districts that levy an incremental sales tax on goods sold within a designated area. The additional tax revenue is then used to support the development of infrastructure improvements. The sales tax service area can be expected to derive benefits from the infrastructure improvements it helps to fund. Sales tax districts may also be implemented on a larger scale, such as a municipality or county. The incremental sales tax rate is established by statute. Sales tax district statutes also identify which types of investments the resulting funds may be used to support. In Hawaii, the GET is currently levied by the State. Transactions attributable to the county and subject to the state GET or use tax rate of 4 percent are also subject to a county surcharge of 0.5 percent, for a total tax rate of 4.5 percent.

4.6.5 General Funds

General funds are funds held by authority and apply to both state and local revenue. The General Fund is used to account for resources not specifically set aside for special purposes. Any activity not financed through another specific fund is financed through the General Fund. The appropriations acts adopted by the Legislature provide the basic framework in which the resources and obligations of the General Fund are accounted. The operating appropriations and the related General Fund accounting process complement each other as basic control functions in the general administration of the government. The FY 2018 State of Hawaii financial statement shows that the State has general governmental funds in the amount of

approximately $11 billion dollars. In addition, the FY 2018 City and County of Honolulu financial statement shows that the City and County government have general governmental funds in the amount of approximately $1.8 billion dollars. Major categories of the governmental fund revenue sources include taxes, licenses and permits, intergovernmental, charges for services.

4.6.6 Tourist and Convention Development Taxes on Transient Rentals

Tourist and convention development taxes on transient rentals are tax collected from short-term rentals, typically under 6 months. Hawaii has a statewide TAT, portions of which are netted out to the counties by the State. The FY 2018 State of Hawaii financial statement shows that the State has general governmental funds in the amount of approximately $305 million dollars.

4.6.7 Vehicle Miles Traveled Toll or Fee

A VMT toll or fee is a funding mechanism to replace or supplement the fuel tax, charged based on vehicle miles traveled. Section 4.4.4 provides additional details.

4.7 Partner Agencies Sources

Partner agency funding sources are those agencies who may have an interest in a transportation infrastructure project and are willing to partake in funding. Key considerations are the interest of such agencies and an assessment of any impacts to their current finances. A summary of partner agency sources is provided in this section.

4.7.1 Regional Authorities (Including Those That May Collect Road Tolls)

This revenue source typically includes funding from regional authorities who direct funds from tolls to transit. Hawaii currently does not have toll infrastructure in place. The FY 2018 City and County of Honolulu financial statement shows that the City has a PTSF (an enterprise fund) in the amount of $57 million dollars (approximate). The PTSF was created for the management and operating and maintenance of the bus transportation system, including TheBus and TheHandi-Van. Revenue sources include passenger fares for The Bus and TheHandi-Van and subsidies from the General and Highway funds to support transit operations. Additional sources include City contributions for the purchase of capital assets and funding from federal grants.

4.7.2 Community Redevelopment Agencies

These are funding sources from a community development trust fund linked to the project. One example is the Community Transportation Development Fund managed by Community Development Transportation Lending Services (CDTLS), which is a fully operational nonprofit subsidiary of the Community Transportation Association of America. CDTLS provides financing for transit and related economic development projects. The fund currently consists of two major sources of funding: the U.S. Department of Agriculture's Intermediary Relending program (including the Rural Development Loan Fund) and commitments from the nonprofit Community Reinvestment Fund (CRF) for participation loans.

4.8 Private Financing Sources and Mechanisms

Private financing sources provide direct funding from private institutions such as developers, banks, pension funds, equity funds, and others. The cost of private capital is offset through risk transfer and returns reflect the risk-reward profile of the investment. A summary of private-sector sources is provided in this section. One local example of private financing is the HRTP. For the HRTP, HART is developing a 20-mile, 21-station

transit system located between East Kapolei and Ala Moana under a design-build-finance-operate-maintain (DBFOM) delivery model.

4.8.1 Private Equity (Direct Developer Contribution)

This source is mainly contributed from a private entity to an authority for a specific project. Private contributions can happen in the form of equity, property, or in-kind services. The private entity provides the contribution voluntarily. A private landowner, developer, or business or service provider makes such a contribution to enhance the feasibility or financing of the project because it expects that the long-term value it will derive from the project will exceed its initial contribution. This value is often in expected business activity or development facilitated by improved mobility or accessibility afforded by the project.

4.8.2 Public Private Partnership (P3) Private Equity

This refers to equity in a project company that is a separate legal entity for a specific P3 project. P3s for new building facilities can involve construction of a new surface transportation asset or modernization, upgrade, or expansion of an existing facility. These P3s are structured as DBFOM deals that bundle and transfer the responsibilities for the design, construction, finance, and long-term O&M over the term of the agreement to a private-sector partner.

4.8.3 General Obligation Bonds

General obligation, or GO, bonds are backed by the general credit and taxing power of the authority. The GO bonds are repaid by the general revenue of the issuing municipality, while revenue bonds are supported by a specific revenue source, such as income from a toll road, hospital, or higher-education system.

4.8.4 Revenue Bonds

Revenue bonds are backed by the revenue stream from a specific project investment. Examples of revenue bonds include water and sewer or public power electric utilities bonds, special tax revenue bonds, transportation revenue bonds, education revenue bonds, hospital and health care revenue bonds, and lease revenue bonds.

4.8.5 Bank Loans

Bank loans are issued and based on issuer borrowing capacity. A project financing structure may often involve several equity investors or sponsors and a syndicate of banks or other lending institutions that provide loans to the operation. They are most commonly non-recourse loans, which are secured by the project assets and paid entirely from project cash flow, rather than from the general assets or creditworthiness of the project sponsors. The financing is typically secured by all project assets, including the revenue-producing contracts. Project lenders are given a lien on all of these assets and are able to assume control of a project if the project company has difficulties complying with the loan terms.

4.8.6 Pension Funds

These refer to pension fund debt and equity based on issuer borrowing capacity and project attributes. Infrastructure has recently become an asset class in its own right for private-sector investors, most notably pension funds. For example, large Canadian pension funds and sovereign investors have been particularly active in the field of energy assets and other infrastructure projects.

4.8.7 **Lease Financing (for Vehicles)**

This alternative includes the lease financing for rolling stock where the ownership of the fleet remains with another party (such as the manufacturer). For example, Macquarie European Rail leases passenger and freight rolling stock to train operators across Western and Central Europe.

5 Conclusions

5.1 Conclusions

This report documents and informs the development of OahuMPO's fiscally constrained budget within its long-term regional transportation plan, ORTP 2045. In doing so, the report examines revenue projections for each constituent funding source available for transportation improvement projects on the island of Oahu. Additionally, this report examines the impacts to these revenue forecasts from the emerging COVID-19 pandemic and presents three recovery scenarios in comparison with a pre-COVID-19 forecast. OahuMPO and its partner agencies can thus quantify and plan for the our COVID recovery and beyond. By coupling available information and performing tax revenue analysis, the consultant team forecasted the reasonably expected future tax revenues for transportation for the State of Hawaii and the City and County of Honolulu under existing policies, as well as federal sources including FHWA and FTA. Given the COVID-19 crisis, many of the assumptions had to be reviewed and updated. Under pre-COVID conditions, revenues were assumed to grow at 2 percent per year. However, with the decline in tourism and other economic activity, projections provided by the State of Hawaii suggest a decrease of approximately 9 percent for state transportation-related tax revenues for the period FY 2021 to FY 2025; and 7 percent over longer period of time (FY 2021 to FY 2045). Similarly, projections for the City and County of Honolulu suggest a decrease of approximately 11 percent for the period FY 2021 to FY 2025 and 7 percent over a longer period of time (that is, FY 2021 to FY 2045). No impacts were assumed for federal sources. Table 5-1 summarizes the forecasted revenues for the base case scenario compared to pre-COVID conditions. Table 5-2 summarizes the base case scenario revenues organized by 5-year totals net of projected debt service of approximately $4 billion over the 25 year planning period.

Table 5-1. Summary of Gross Transportation Revenues (FY 2021 to FY 2045) by Source (amounts in millions)

Revenue Source	Pre-COVID Forecast	Estimated Impact due to COVID-19	Base Case COVID-19 Revenue Impact Forecast
FHWA	$2,861	$0	$2,861
FTA	$1,197	$0	$1,197
State (Oahu Share)	$7,272	($336)	$6,936
City Highway and PTSF Revenues	$12,744	($1,647)	$11,097
City General Fund Subsidy for Transit O&M	$12,448	($573)	$11,875
TOTALS	$36,522	($2,555)	$33,967

Table 5-2. Summary of Base Case Revenues Net of Project Debt Service (amounts in millions)

Revenue Source	FY 2021-2025	FY 2026-2030	FY 2031-2035	FY 2036-2040	FY 2041-2045	TOTAL
FHWA	$465	$513	$567	$626	$691	$2,861
FTA	$195	$215	$237	$262	$289	$1,197
State: Oahu Share	$1,052	$1,186	$1,304	$1,440	$1,572	$6,555
City Highway plus PTSF	$950	$1,236	$1,453	$1,634	$1,773	$7,045
City General Fund Subsidy for Transit O&M	$1,256	$1,872	$2,367	$2,907	$3,474	$11,875
TOTALS	**$3,917**	**$5,021**	**$5,928**	**$6,868**	**$7,799**	**$29,534**

.Note: Differences due to rounding.

A combination of funding and financing from multiple sources are used to successfully deliver transportation programs and projects in State of Hawaii. Given funding constraints throughout the transportation sector, for any program or project the goal is to optimize or find the right mix of available funding and financing that maximizes tax-payer value, optimizes risk transfer, and meets strategic objectives.

There are many sources of funding and financing that are described in this report are currently used within the State of Hawaii. To help with OahuMPO's global understanding of transportation funding and financing, a description of these sources is provided. Some sources, despite not being currently available, could be developed in Hawaii subject to further detailed analysis and stakeholder engagement. Table 5-3 provides a list of potential funding sources summarized in Section 4. This list could be used as a starting point to prioritize and identify viable candidates for further research.

OahuMPO's transportation planning process, policy and planning activities must be coordinated with funding and implementation activities. Due to funding constraints, a combination of funding and financing from multiple sources is used to successfully deliver programs and projects that meet needs and maximize value. For any program or project the goal is to optimize or find the right mix of available funding and financing that maximizes tax-payer value and strategic objectives. Transportation-related tax revenues are a primary source of funding. To help minimize funding constraints, OahuMPO could explore the protentional funding sources identified in Table 5-3.

Table 5-3. Summary of Alternative Funding Sources for Transportation Revenues

Funding Source Category	Funding Sources that have Highest Revenue Potential
Operating	▪ Fareboxes ▪ Advertising ▪ Naming Rights ▪ Station Revenues ▪ Special Situations ▪ Parking
Non-Operating	▪ Government Revenue Grants and Subsidies ▪ Rental Income ▪ Investment Income ▪ Other Local Taxes ▪ Vehicle Registration Fees
Value Capture	▪ Transit-oriented Development ▪ Joint Development (see Appendix C6 for example) ▪ Air Rights (see Appendix C2 for example) ▪ ROW Use Agreements ▪ Tax Increment Finance Districts ▪ Ad Valorem Tax (Property Taxes) ▪ Impact Fee ▪ Asset Monetization
State and Regional	▪ SIB ▪ State Block Grants ▪ Energy Programs ▪ Usage Tolls and VMT Toll or Fee (see Appendix C1 for example)
Federal	▪ TIFIA loans and lines of credit ▪ FHWA PAB ▪ BUILD Grants ▪ FTA New Starts and Capital Grants ▪ FHWA Funds
Local Taxation	▪ Special Tax Assessment Districts ▪ LOGT ▪ Surtax ▪ Local Sales Tax ▪ General Funds ▪ Tourist and Convention Development Taxes on Transient Rentals ▪ VMT Toll or Fee
Partner Agencies	▪ Regional Authorities ▪ Community Redevelopment Agencies

Funding Source Category	Funding Sources that have Highest Revenue Potential
Private Financing	▪ Private Equity (see Appendixes C4 and C5 for examples) ▪ P3 Private Equity ▪ General Obligation Bonds ▪ Revenue Bonds ▪ Bank Loans ▪ Pension Funds ▪ Lease Financing (for Vehicles)

5.2 Recommendations

Based on these study findings, Jacobs recommends the following to OahuMPO:

1. Study and explore the implementation of alternative funding and financing options within specific transportation infrastructure projects. As described in Section 4 of this report, many U.S. authorities use a mix of sources beyond traditional funding sources to develop projects.

2. While a detailed cost and expenditure review was beyond this scope of this study, such a review will serve to reduce financing uncertainties and is essential to the formation of the full fiscally constrained budget.

3. Consider periodic updating or revising of forecasts to account for the economic crises and changes resulting from the COVID-19 pandemic. The update should also consider new federal funding sources made available as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act passed by Congress and signed into law in March and December 2020.

Appendix A: Future Revenue Impacts and Implementation Issues for Alternative Revenue Policies

Within this appendix, the consultant team has included a summary discussion about key considerations of existing policies on households. Certain existing policies could potentially increase household costs (which in turn could increase revenue to the State and City and County), but at the same time these costs could be offset by broader economic benefits. Economic inputs for household types are included as policies may impact low-income households differently than middle- and high-income households. Going forward, we recommend that OahuMPO perform an extensive economic impact analysis tied to changes in policy decisions.

In general, transportation policies are developed to improve overall accessibility and reduce transportation costs, travel time, vehicle operating costs, road and parking costs, and accident and environmental damages with a view to increase productivity and development benefits. With this broad objective in mind during the course of the study, the consultant team collaborated with OahuMPO to gain insight into five new or evolving policies and their impact on households.

This appendix includes a discussion on potential economic considerations because certain policies could increase household costs (which in turn could increase revenue to the State and City and County), but at the same time, these costs could be offset by broader economic benefits. The intent of this appendix is not to quantify the household impacts, but to provide OahuMPO with context for future detailed assessment and analysis. Going forward, we recommend that OahuMPO perform an extensive economic impact analysis tied to changes in policy decisions.

A.1 Rental Car Surcharge

In 2019, the tax on rentals cars for tourists in Hawaii increased to $5 a day. The increase was applied to the rental motor vehicle surcharge tax (if renters do not have a Hawaii driver's license) and the tour vehicle surcharge tax for all categories of tour vehicles. This policy targets out-of-state renters and tour vehicles. In terms of local Oahu residents or individuals with a valid Hawaii driver's license, this policy does not have a direct impact on Oahu households regardless of their income level. However, households may be impacted if they run a business in the tour vehicle industry because such businesses will be collecting and paying higher taxes resulting from this change in policy. In addition, increasing taxes on rental cars might result in tourists seeking alternative transportation options, this may impact the demand of tour vehicles and ultimately impact the income of households running tour vehicle business.

As a way of generating revenue for the General Fund to operate the state of Hawaii, the State requires the car rental companies to pay a surcharge tax on rental vehicles. This tax is applied at all rental car locations. Effective January 1, 2019, Hawaii increased the tax on rental cars as follows:

- The rental motor vehicle surcharge tax increased from $3 to $5 a day for rentals to drivers without a valid Hawaii driver's license (imposed on the lessor).
- Hawaii imposed a Tour Vehicle Surcharge Tax on the tour vehicle operators. The tour vehicle surcharge tax increases from $65 to $66 for each tour vehicle used during the month with over 25 passenger seats and from $15 to $16 for each tour vehicle used during the month with 8 to 25 passenger seats.
- Mandatory taxes, fees, and surcharges include the Hawaii Motor Vehicle Surcharge Tax of $5.00 per day at all locations.

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Table A-1. Advantages and Disadvantages of Rental Car Surcharge

Advantages	Disadvantages
▪ Increase state's revenue and eventually households will benefit from state's increased investment in public improvements in various ways. ▪ For example, Massachusetts implemented a $2 fee for renting vehicles in the state starting January 1, 2019. This income is currently used to pay for municipal police training in areas ranging from drug recognition to implicit bias to promote safety.	▪ No obvious direct disadvantage on households has been identified regarding this policy. ▪ This policy mainly affects non-local rental car users and has very limited negative impact on Hawaii drivers. ▪ There may be some impacts on local tour companies and may further impact their employees, but the surcharge may eventually be transferred onto the customers.

A.2 Parking Fee Rate Changes

Parking revenue is generated through the collection of parking fees charged to individuals who park their vehicles on public or private lands.

In early 2019, Oahu implemented an increase in parking fees. While the effective hours of parking meters remain the same, the hour of enforcement is slightly expanded along with the meter rate increase in the affected urban core areas. This parking rate increase affects all vehicles, including tourists and local households as long as they park vehicles in the impacted areas. The impacted areas are concentrated in the urban core and Waikiki. We believe this policy impacts households at various levels differently based on their parking behavior. As this policy applies to parking meter rates, households who park in garages are unlikely to be impacted. The impact of this policy is the lowest for households that do not use parking meters very often in these areas, for example, households that do not have rigid demand to visit urban core or Waikiki as well as households that usually use alternative parking options. Households who park in these areas and have routine demands might seek alternative parking options or alter their routine to fulfill their needs elsewhere with lower parking costs.

The City and County of Honolulu DTS announced that the parking rates at on-street metered stalls in Oahu were subject to increase effective February 2019. The notable parking rate changes were as follows:

- The rates for smart meters in the Honolulu urban core and Waikiki increased to $3 an hour from $1.50 an hour. The affected areas include Chinatown, downtown, the Civic Center near Honolulu Hale, and Waikiki from Hobron Lane to Kapahulu Avenue. Parking meters at Honolulu Zoo and Kapiolani Park remained at their current rates.
- The rates for combination electronic or coin-operated parking meters outside the urban core increased to $1.50 an hour from 75 cents an hour. The affected neighborhoods include Kaimuki, Liliha, Aala, Kalihi, Kailua, Kakaako, Sheridan Tract, Kapahulu, McCully, Makiki, and Ala Moana.

In addition, the effective hours of parking meters did not change for most of the island, except in Waikiki. Enforcement in Waikiki is now from 6 a.m. to 10 p.m., 7 days a week, a change from the previous 7 a.m. to 7 p.m.

FINAL DRAFT

Table A-2. Advantages and Disadvantages of Parking Fee Rate Changes

Advantages	Disadvantages
▪ Increase City's revenue and eventually households will benefit from City's increased investment in public improvements in various ways. ▪ Discourage some drivers from parking (or even driving) in busy areas with higher parking rates, thus release congestion and free up some parking spaces. ▪ Encourage the use of public transit and alternative transportation methods.	▪ Households will need to pay higher rate (almost doubled) to park in these urban core areas. ▪ Effective hours of parking meters are expanded in Waikiki; households will have to pay or pay more for parking over longer period of time. ▪ Overall this will end up with higher parking cost for households; and may generate discouragement and negative emotions towards the policy change.

A.3 Rideshare Tax/Surcharge

Following other major cities in the U.S., Oahu is considering implementing a rideshare tax/surcharge. Similar to parking fee rate change, we believe this policy will impact households at various income levels differently depending on their short-trip travel habit and accessibility of alternative travel options. This policy will have a minimum direct impact on households who routinely take public transit as well as households who drive their own cars instead of using rideshare service. The household income for households with rideshare service employees might be affected depending on how the rideshare companies modify employee salary structure. As seen in most other cities, some of the increased cost to the rideshare companies may ultimately get passed on to customers. Therefore, households that need to use the service will have to pay more. Customers with higher income may not alter their routine while lower-income customers are more likely willing to seek alternatives for transportation. If this policy brings in reduction in rideshare vehicles/traffic on the streets, non-customer road users can embrace the congestion relief and improved driving and riding experience and rideshare customers could also experience better riding experience with the traffic reduction.

As a way of generating revenue some cities and states require rideshare companies (such as Uber and Lyft) to pay a surcharge tax on each rideshare trip taken. Hawaii to date has not implemented a rideshare tax or surcharge however, examples of comparable cities and states in the U.S. that have implemented such fee are detailed below.

- **San Francisco:** The measure, which was planned to be unveiled at a Board of Supervisors meeting, would tax net fares of Uber and Lyft rides between 1.5 percent and 3.25 percent, depending on the type of ride. If the measure passes, it is expected to raise between $30 million and $32 million a year. If approved by voters, the tax would allow the city to charge ride shares 3.25 percent of every ride, about 33 cents for every $10 ride. The fees would be less (1.5 percent) for carpool share rides. Individual rides in electric cars get discounted down to 1.5 percent.
- **Boston:** Massachusetts Governor Baker signed into effect a ride-hailing law in 2016. The law requires the strongest state background check of drivers in the nation. It also requires ride-hailing companies to pay a 20-cent-per-ride fee, a portion of which will go toward helping taxi drivers who have been hurt by the new technology. The fee cannot be passed on to consumers and will sunset after 10 years. The law also allows ride-hailing services to pick up passengers at the Boston Convention Center and, with certain permits, at Logan Airport.

  In July 2019, the Boston Mayor wanted to increase fees on Uber and Lyft rides with the aim of reducing congestion, cutting emissions, and raising money for local governments. The Mayor was pushing two bills that would change the fee on ride-hailing services to 6.25 percent, the same as the state's sales tax, which would mean a 62-cent fee on a $10 ride. Shared rides, or trips in zero-emission or electric vehicles, would have a 3 percent fee. There would also be a 20-cent fee for each mile a ride-hailing vehicle travels without a passenger inside during the morning and evening rush hours. Zero-emissions vehicles would be exempt from the fee.

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- **Washington D.C:** The District Council approved a new tax on ridesharing services where taxes would go up from 1 to 6 percent per ride, amounting to 60 cents instead of the current 10 cents on a $10 ride, pending approval from Mayor Muriel Bowser. The increase went into effect October 1, 2018 and raises $23 million to help pay for D.C.'s $180 million share of dedicated funding for Metro.

Table A-3. Advantages and Disadvantages of Rideshare Tax/Surcharge

Advantages	Disadvantages
▪ Create new revenue source for the state and eventually households will benefit from state's increased investment in public improvements in various ways. ▪ With higher rideshare cost, some customers may consider alternative transportation methods, and this would encourage the use of public transportation. ▪ This will help decrease traffic congestion. ▪ For example, New York has introduced a rideshare surcharge as part of a greater plan to help fund improvements to local transit system. ▪ This could lead to increased investment in public transportation system (such as improved safety, reliability, and connectivity).	▪ Households will need to pay more if they need to use rideshare services. ▪ Local rideshare drivers may see some changes of their income structure or total income paid by rideshare companies.

A.4 TOD Area Property Tax Rate Changes

Major metropolitan cities with high property valuations have implemented property tax rate increase in TOD areas. This policy impacts property owners in the affected areas as they required to pay higher property tax; however, the same property owners gain access to improved transportation and upgraded ancillary facilities. With the various developments, increased cost of living for households in the district, property tax payments increase for homeowners and rental payments increases for renters. As a result, households with lower income may seek alternative locations for living to maintain their spending levels before the tax increase.

As a means of generating revenue, high-value cities such as Vancouver, Toronto, New York, Miami, San Francisco, Los Angeles, Boston, and Chicago have implemented TOD area property tax. Using this funding method, property taxes in a specific area are subject to increase to pay for new development or upgrades to existing infrastructure (that is, transit stations) in the area. The following provides examples of cities where TOD property tax has been implemented as a means of revenue generation:

- **Toronto:** Metrolinx introduced an infrastructure fund using a property tax increase that starts at 0.5 percent and is expected to rise to 2.5 percent. This fund is to assist with the payment of $900 million worth of capital projects.
- **Chicago:** The Chicago City Council in April 2019 approved TIF deals for projects. The city and developers are building residences and parks first, then adding a light rail line later in Lincoln Yards. TIF districts capture all growth in the property tax base in a designated area for a set period of time, usually 20 years or more, and divert it into a special fund for projects designed to spur redevelopment and eradicate blight.

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Table A-4. Advantages and Disadvantages of TOD Area Property Tax Rate Changes

Advantages	Disadvantages
▪ Improve the viability of downtown business districts and/or rehabilitate historic properties. ▪ Provide infrastructure needed to develop a site for new industrial or commercial use or public infrastructure improvements. ▪ This helps create jobs for local workforce and entice developers to invest. ▪ This could also bring positive impact on property value in the vicinity of the development. ▪ Bring in revenue for the state and boost economy growth.	▪ Property owners within the district will pay more for property tax. ▪ With the development, cost of living may increase at certain degree. ▪ The development will bring in more residents and visitors, and this may result in increased traffic and congestion in the area. ▪ Households will experience various inconvenience related to traffic modifications, noise, dirty/closed streets, and other impacts due to the construction.

A.5 Value Capture and TOD

Value capture is a funding source tied to the value of real estate within a predefined vicinity of the transit infrastructure. Since value capture is linked to real estate valuation, a key consideration for this funding source is the cyclical nature of the real estate market and the risks that it carries. Other considerations include the time it could take to structure a deal with multiple real estate developers.

From the examples we have seen, value capture usually takes one of three forms: direct value capture, indirect value capture, or asset utilization or recycling. In general, households benefit from the values created through related projects and improvements in various aspects. In the form of TOD, these benefits will focus on upgrades in transit systems and related services as well as property value increase. The improved transit system brings increased demand on public transit. At the same time, higher-income households tend to own more cars and use less transit than lower-income households. With property value increasing, the cost of renting rises. Some lower-income households and renters may need to seek alternative housing options outside of the area.

Besides the general impacts on households, transportation projects and policies usually have wide-ranging impacts on a region in terms of productivity, employment, commercial and business activities, real estate values, investment, and tax revenues. Moving forward, we recommend that Oahu MPO perform an extensive economic impact analysis tied to changes in policy decisions. A detailed economic impact assessment will capture the broader impacts of policies.

The types of value capture sources could include transit-oriented development, joint development, air rights, ROW, TIF districts, ad valorem tax, impact fee, and asset monetization. The following are examples of value captures and TOD in the U.S.:

- **CATS LYNX Blue Line Extension ROW:** The CATS LYNX Blue Line Extension will extend light rail transit service from the 9.6-mile LYNX Blue Line that opened in the South Corridor of Charlotte, North Carolina, in 2007. The alignment will run within the existing Norfolk Southern and North Carolina Railroad (NCRR) rights-of-way from center-city Charlotte to the middle of the route where it will transition to the median of North Tryon Street/US 29. Project funding sources include $13.4 million in Local In-Kind ROW Contributions.
- **Hennepin County, Minnesota TOD Program:** The Hennepin County Board of Commissioners established the TOD program in 2003 to support both redevelopment and new construction that enhances transit usage. $750,000 was granted to the city of St. Louis Park for site acquisition and area infrastructure improvements for redevelopment of a site near the planned Wooddale light rail

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transit station on the Green Line Extension. $405,000 was granted to the city of Bloomington to upgrade a sanitary sewer to support a major expansion to an existing manufacturer that will retain and create jobs. Grant funding also provided for pedestrian enhancements to improve the connection between area businesses and the Hiawatha Light Rail Transit station.

- **Moynihan Train Hall Joint Development:** The Moynihan Train Hall is part of the first stage of the Gateway Program, a comprehensive set of rail infrastructure improvements between New Jersey and New York, that will transform the James A. Farley Post Office Building into a modern, state of the art transportation facility. The project is being developed by a joint venture between The Related Companies L.P. and Vornado Realty Trust. The developer will operate and lease the commercial portion of the project.
- **BelRed Street Network Impact Fee:** The BelRed Street Network is part of BelRed Transformation, a plan for redevelopment and economic growth within a 900-acre area between downtown Bellevue and Overlake/Microsoft, 10 miles east of Seattle, Washington. Leveraging the East Link Extension light rail transit service under construction between downtown Seattle and Redmond, east of Bellevue, BelRed will be anchored by transit-oriented development around two stations in the corridor. Funding sources for this $323.2 million project include $158.9 million worth of TIF, special assessment, development impact fees from City of Bellevue.
- **Portland Airport MAX Red Line TIF:** The Airport MAX is a 5.5-mile light rail extension to Portland's existing Red Line, connecting Downtown Portland to PDX. The total project funding sources of $125.8 million include $23.8 million from City of Portland bonds backed by TIF revenues.
- **San Francisco Transbay Transit Center TIFIA Value Capture:** TJPA was created in 2001 as a collaboration of Bay Area government and transportation agencies to design, build, operate, and maintain the new Transbay Transit Center, which will replace the existing Transbay Terminal that serves local, regional, and intercity bus transit. TIFIA Credit Assistance provides direct loan of $171.0 million. The TIFIA loan is secured by a senior lien on Project Revenues, which include dedicated tax increment revenues from land sold and developed in the state-owned parcels surrounding the Transit Center (98 percent of revenues), and a commitment of passenger facilities charges from the Transit Center's initial primary tenant, AC Transit (2 percent of revenues). This is the first TIFIA loan secured by value capture revenues from real estate taxes on surrounding transit-oriented development.
- **Orlando Conroy Road Bridge TIF:** The Conroy Road Bridge and approach ramps are located just west of the City of Orlando where it crosses I-4. The bridge and ramps provide accessibility to a 400+ acre parcel situated on the east side of I-4 that contains the Mall at Millenia and other commercial development, including retail space and an office park. The City of Orlando, Orange County, Florida DOT, and the development group for the Millenia project developed the project through a public-private partnership. This partnership used TIF as a performance-based approach to link payment for the transportation improvements with the resulting economic development. The arrangement enabled the city and county to finance most of the transportation infrastructure through a Community Redevelopment Agency (CRA) district that served as the vehicle for issuing tax-exempt bonds to advance funding for the project. The Millenia project development group agreed to have the site and building developers repay the city for debt service associated with the bridge project bonds through an annual special assessment district fee, which was fixed regardless of the level of actual development, plus a transportation impact fee based on the level of development under permit to be built.
- **Boston Copley Place Right-of-Way Use Agreement**: Copley Place is a $400 million mixed-use development project built on a 9.5-acre land-air parcel above the Massachusetts Turnpike in Boston, Massachusetts. The project transformed a barren highway interchange and rail right-of-way that bisected the Back Bay and South Boston neighborhoods, provided no employment or tax revenues, and had no residential or shopping uses into a vibrant development connecting these neighborhoods and attracting tourists, shoppers, and new residents to the site, while generating over $27 million annually in state and local taxes.

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Table A-5. Advantages and Disadvantages of Value Capture and TOD

Advantages	Disadvantages
▪ Improved local public transit can cut vehicle transportation cost and time spent on commuting (reduced transportation costs). ▪ Expanded mobility choices for individuals and families. ▪ Increased transit ridership that in turn increases revenue for the city and state. ▪ Discourage vehicle dependence and congestion. ▪ With less traffic, greenhouse gas emission can potentially reduce. TOD is environmentally conscious. ▪ People will have more time and money to spent at shops and so on in the local area and this can strengthen local economies. ▪ For property owners, TOC may lead to potential increase in property values. ▪ The Center for Transit-Oriented Development reports that a compact community with a strong transit system can create jobs and attract a young, innovative talent pool. With much less cars, communities can become more walkable and therefore more active and healthier. ▪ A TOD community is thought to improve community health and even reduce obesity. A research article titled The Effect of Light Rail Transit on Body Mass Index and Physical Activity found that commuters who took a newly installed train were about 6.45 pounds lighter than those who continued driving to work.	▪ May result in higher number of renters in the area, along with more frequent moves. ▪ May trigger changes of the character of a neighborhood through the influx of more affluent residents and businesses. ▪ As a result of gentrification, wealthier households tend to own more cars and use transit less than poor households. ▪ May catalyze undesirable neighborhood change, for example, core transit users such as renters and lower-income households may get priced out in favor of higher-income, car-owning residents who are less likely to use public transit for commuting. ▪ May have negative impact if the planner/developer neglect pedestrian accessibility, safety, and other factors during the development.

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Appendix B: Assumptions and Data Book for The Revenue Forecast Model

To develop the Assumptions and Data Book, the Jacobs team has reviewed the following various background information:

- Forecast time and duration.
- Anticipated policy updates and changes.
- Authority collection and management costs.
- Macro-economic assumptions (for example, inflation).
- Available revenue sources under existing policies (including federal sources and taxation).
- Types and categories of vehicle.
- Fuel consumption metrics.
- Market data (for example, geographic and demographic).
- Historical revenue data.
- Historical and forecast traffic data.
- Gas price, vehicle registration, and related data.
- Mode share.
- Subsidization policies for various modes.

The following tables will discuss the individual assumptions and data elements to support the forecast model in two parts:

- Economic assumptions (Table B-1)
- Revenue assumptions (Tables B-2 and B-3).

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Table B-1. Economic Assumptions

Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Consumer Price Index for All Urban Consumers (CPI-U)	2.79	Verified	High	No	https://www.bls.gov/regions/west/news-release/consumerpriceindex_honolulu.htm	Jan. 2019 value; rounded to two decimal places
CPI-U Housing	3.06	Verified	High	No	https://www.bls.gov/regions/west/news-release/consumerpriceindex_honolulu.htm	Jan. 2019 value; rounded to two decimal places
CPI-U Transportation	2.18	Verified	High	No	https://www.bls.gov/regions/west/news-release/consumerpriceindex_honolulu.htm	Jan. 2019 value; rounded to two decimal places
Rideshare Data	Na	Unverified	Low	Yes	Na	Na
Population Growth	0.8%	Verified	High	No	https://data.uhero.hawaii.edu/#/category?id=23&data_list_id=25&view=table	Hawaii
GDP Growth	5.2%	Verified	High	No	https://data.uhero.hawaii.edu/#/category?id=21&data_list_id=20&view=table	Hawaii

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Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Personal Income Growth	5.5%	Verified	High	No	https://data.uhero.hawaii.edu/#/category?id=21&data_list_id=44&view=table	Hawaii
Air Seats Growth	3.4%	Verified	Medium	No	https://data.uhero.hawaii.edu/#/category?id=36&data_list_id=37&view=table	Hawaii
Real Property Valuation Growth	8.1%	Verified	Medium	No	https://data.uhero.hawaii.edu/#/category?id=49&data_list_id=47&view=table	Hawaii

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Table B-2. Revenue Assumptions, State of Hawaii (amounts in thousands)

Revenue Source	Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Governmental Funds – Major Taxes	General Excise Tax	$3,553,975	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Major Taxes	Net Income Tax - Corporations and Individuals	$2,456,674	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Major Taxes	Public Service Companies' Tax	$117,641	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Major Taxes	Transient Accommodations Tax	$304,521	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Major Taxes	Tobacco and Liquor Tax	$157,988	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Major Taxes	Tax on Premiums of Insurance Companies	$162,318	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	

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Revenue Source	Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Governmental Funds – Major Taxes	Franchise Tax	$15,712	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Major Taxes	Other Tax	$145,861	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Vehicle Weight and Registration Tax	$135,080	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Liquid Fuel Tax	$85,211	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Rental Motor/Vehicle Surcharge Tax	$54,864	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Licenses and Fees	$47,066	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds –	Fines, Forfeitures, and Penalties	$38,767	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	

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Revenue Source	Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Vehicle-related Taxes							
Governmental Funds – Vehicle-related Taxes	Non-Tax Revenues	Not applicable	Verified	High	No		
Governmental Funds – Vehicle-related Taxes	Interest and Investment Income	$36,527	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Charges for Current Services	$477,717	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Intergovernmental	$2,878,717	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Rentals	$35,466	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Governmental Funds – Vehicle-related Taxes	Revenues from Private Sources	$184,661	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	

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Revenue Source	Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Governmental Funds – Vehicle-related Taxes	Other	$428,066	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Airports	Airport Concession Fees	$181,726	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Airports	Aviation Fuel Tax	$2,613	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Airports	Airport Use Charges	$86,059	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Airports	Airport Rentals	$153,159	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Airports	Airport Others	$7,538	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Harbors	Harbor Rentals	$27,684	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	

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Revenue Source	Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Proprietary Funds - Harbors	Harbor Services and Others	$136,039	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Proprietary Funds - Harbors	Harbor Others	$1,388	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Other Proprietary Funds	Not applicable	Not applicable	Verified	High	No		
Unemployment Compensation	Not applicable	$186,239	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Administrative Fees	Not applicable	$4,080	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Premium Revenue - Self Insurance	Not applicable	$86,023	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	
Experience Refunds, Net	Not applicable	$25,241	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	

Revenue Source	Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yes or No)	Source of Assumptions	Notes
Other	Not applicable	$3,131	Verified	High	No	https://ags.hawaii.gov/wp-content/uploads/2018/12/FY2018CAFR_finalrev1.pdf	

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Table B-3. Revenue Assumptions, City and County of Honolulu

Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yeses or No)	Source of Assumptions	Notes
Fines and Forfeits	$968	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Real Property Tax	$1,171,000	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; in millions
Public Service Company Tax	$35,234	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Building Permits	$16,500	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; in millions
Motor Vehicle Registration Annual Fee	$14,787	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Emergency Ambulance Services	$37,792	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Public Utilities Franchise Tax	$23,840	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Board of Water Supply	$253,543	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018

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Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yeses or No)	Source of Assumptions	Notes
Water System Revenue Bond	varies	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	See footnote [2]
Housing Rental Income	$9,839	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Disposal and Collection Fees	$64,744	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Dedicated Agricultural and Vacation Lands	$11,369	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; Tax exemption
Reimbursements and Recoveries for General Fund	$47,761	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Electrical Energy Fee	$67,603	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Sewer Service Charges	$45,541	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018

[2] Wastewater system revenue bonds in the City's business-type activities were issued during fiscal years 1999 through 2018, in the original amount totaling $3.3 billion, less discounts of $38.3 million and adjusted for premiums of $248.1 million, which are being amortized over the related term of the bonds. The bonds bear interest at 1.1% to 6.3 % and mature at various dates through fiscal year 2048. The wastewater system revenues collateralize the revenue bonds.

Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yeses or No)	Source of Assumptions	Notes
Dedicated Land in Urban District	$60	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; Tax exemption
Residential Property Tax	$3,089	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; Tax exemption
Commercial Property Tax	$291	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; Tax exemption
Low-Income Rental Housing Exemption	$8,806	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018; Tax exemption
Passenger Fares for Transit Services	$56,322	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Freight Curb and Passenger Loading Zone Permits	$273	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Excavation and Repair of Streets and Sidewalks	$268	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018
Street Parking Meter Collections	$3,635	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018

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Assumption Name	Assumption Base Value	Verified/ Unverified with OahuMPO	Confidence Level (Low/Medium/ High)	Further Investigation Required (Yeses or No)	Source of Assumptions	Notes
Other Parking Meter Collections	$1,016	Verified	High	No	http://www.honolulu.gov/rep/site/bfs/bfs_docs/CC_Honolulu_CAFR_FY2018.pdf	June 2018

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Appendix C: Examples of Alternative Funding and Financing

The following sections provide detailed descriptions of six precedent highway and street projects and programs that are or have been funded using a combination of funding and financing sources. The six precedent projects included here demonstrate how other authorities have used innovative approaches to fund and finance transportation infrastructure needs.

C.1 Chicago Skyway

Built by the City of Chicago in 1958, the Chicago Skyway Toll Bridge (also known as the "Skyway") is a 7.8-mile-long toll road that connects the Indiana Toll Road to the Dan Ryan Expressway on Chicago's South Side. The main feature of the Skyway is a 1⁄2-mile-long steel truss bridge, known as the "High Bridge." The bridge itself spans the Calumet River and Calumet Harbor, a major harbor for industrial ships – its main span extends 650 feet long and provides for 125 feet of vertical clearance.

The Skyway was operated and maintained by the City of Chicago until January 2005 when Skyway Concession Company, LLC assumed its operations under a 99-year operating lease. The lease agreement between Skyway and the City of Chicago was the first privatization of an existing toll road in the United States. In February 2016, Skyway was purchased by three Canadian Pension Funds - OMERS Infrastructure, CPP Investment Board, and Ontario Teachers' Pension Plan.

Chicago Skyway Toll Bridge

Authority:	City of Chicago, IL
Capital Expenditure:	$1.83 billion
Commercial Arrangement:	Public-to-Private Long-Term Lease
Term:	99-year
Funding and Financing Sources:	Original financial structure (backed by toll receipts, toll rates varies by number of axles and time of day): $485 million Cintra equity, $397 million Macquarie equity, and $948 million Bank Loans. The project has gone through multiple refinancing.
Key Parties:	Skyway Concession Company, LLC (SCC), Ferrovial, Macquarie Capital, Canadian Pension Plan Investment Board, OMERS, Ontario Teachers' Pension Plan
Current Status:	The Skyway is currently operational after reaching Financial Close in 2005. Involved in the following transactions after privatization: bond refinancing (various), acquisition (2010), and acquisition (2016).
Additional Notes:	First long-term lease of an existing public toll road in the United States. Funded a $500 million long-term and $375 million medium-term reserve for the City of Chicago, as well as a $100 million neighborhood, human, and business infrastructure fund to be drawn down over five years. The City of Chicago also collected $20 million and the Chicago Transit Authority $8 million in real property transfer taxes from the 2015 sale.

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C.2 New York City Air Rights

An example of sourcing funds by selling air rights owned by a transit authority to developers for commercial development includes the One Vanderbilt (also known as One Vanderbilt Place). The project is a 67-floor skyscraper located immediately west of Grand Central Terminal that was proposed as part of a planned Midtown East rezoning. The project is currently under construction by the developer, SL Green Realty, at the corner of 42nd Street and Vanderbilt Avenue in midtown Manhattan, New York City.

In its September 2014 proposal to the City, SL Green, a real estate investment trust, proposed to pay $400 per square foot for the air rights, then build a 1,500-foot (460-meter), 67-story building, twice as big as the zoning rules permitted. Andrew S. Penson, a real estate developer and the owner of Grand Central Terminal, proposed a deal under which SL Green would pay $400 million for 1.3 million square feet of air rights (approximately $307 per square foot) and spend another $210 million to build transportation improvements for the subway and commuter rail stations below. The developer rejected the offer, calling it a publicity stunt because it valued the air rights at $600 per square foot, nearly 10 times the $61 per square foot Penson paid for it when he bought the station in 2006. In February 2015, Vanderbilt Avenue, between 42nd and 47th Streets, was rezoned under the Vanderbilt Corridor Rezoning Text Amendment, which allows redevelopment on the corridor.

Penson spearheaded a lawsuit where he alleged that the De Blasio administration, City Council, and SL Green have dispossessed Penson of the value of the air rights after the administration allowed SL Green to move forward with the 65-story tower without additional development rights. The suit was filed on behalf of Midtown TDR Ventures LLC, a group that included Penson, along with other investors in Grand Central. SL Green later reached a settlement over this $1.1 billion lawsuit.

The Metropolitan Transportation Authority (MTA) mandated transit station improvements in exchange for allowing the tower's construction. In 2015, SL Green gave $220 million toward the building's construction, of which two-thirds of the money would be used for station redesign, marking it the largest private investment in the subway system to date.

Grand Central Station and One Vanderbilt Project

Authority:	New York City Council
Capital Expenditure:	$220 million toward the MTA improvements around Grand Central Station.
Commercial Arrangement:	The developer SL Green bought 525,000 square feet of air rights thru rezoning. As part of obtaining the air rights, SL Green is paying $220 million toward the MTA improvements around Grand Central Station.
Term:	Not applicable
Funding and Financing Sources:	SL Green secured a $1.5 billion construction loan and obtained equity investment of $525 million from minority stakeholders. The current ownership structure: National Pension Service of Korea owns 27.6 percent, Hines Interest LP owns 1.4 percent, and SL Green retains 71 percent ownership.
Key Parties:	Midtown TDR Ventures (Inc. Penson), SL Green, New York City Council, Mayor, MTA
Current Status:	The project has reached financial close and is currently under construction with expected completion in 2020.
Additional Notes:	The developer is creating a pedestrian plaza between 42nd and 43rd streets on Vanderbilt Avenue. On the ground level at One Vanderbilt, a transit hall will serve as an extension to Grand Central Terminal,

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	providing additional access for the subways and the Long Island Rail Road. The 1.7 million square-foot building is 1,401 feet in height and has 58 stories. The East Midtown rezoning district was created after the deal.

C.3 San Francisco Ridesharing

An example of adopting local taxation mechanisms to generate transit funding can be seen in San Francisco. A study by the San Francisco County Transportation Authority found that Uber and Lyft alone accounted for two-thirds of San Francisco's rising traffic between 2010 and 2016.

To combat the increasing congestion caused by ridesharing services, a 3.25 percent surcharge would be applied to individual rides and a 1.5 percent surcharge would be placed on shared rides starting in San Francisco, as well rides in electric vehicles regardless if it is shared or not.

San Francisco Ride-Hailing Fee

Authority:	City and County of San Francisco Board of Supervisors
Capital Expenditure:	Not applicable
Commercial Arrangement:	The proposal calls for a 3.25 percent tax on net rider fares for single-party trips and 1.5 percent on shared rides. The tax under AB1184 applies to the amount companies receive, excluding tolls and airport fees.
Term:	Not applicable
Funding and Financing Sources:	The money would amount to $30 million annually in the first few years and would be directed to San Francisco County Transportation Authority (SFCTA) and used for transit uses. Uber and Lyft can pass along the tax to riders.
Key Parties:	Uber, Lyft, SFCTA
Current Status:	Uber and Lyft have agreed on the proposal in July 2018. Bill AB1184 was signed in September 2018 however still requires final approval from voters on the 2019 November ballot.
Additional Notes:	Ride service specifically aimed at disabled riders will be exempt. Two-thirds of City voters would have to approve the proposal as the tax would go to a specific purpose and not the city's General Fund. If approved by city voters, the tax would start in January 2020.

C.4 Miami Transit Terminal

The Genting Group struck a deal with the Miami-Dade commission to redevelop an Omni bus station north of downtown Miami. Genting had assembled about 30 acres of land in the area, now known as the Arts and Entertainment District. The project included spending $236 million for the former waterfront site of the Miami Herald and $185 million for the adjoining Omni retail and hotel complex beyond the bus stop.

The Genting Group's subsidiary, Resorts World's plans for the bus terminal costs about $200 million. The project also includes 20 floors of residential units and a 300-room hotel. The tower fronts a grand public plaza and the Boulevard Shops, which are being renovated, and would also be part of the project.

Omni Station Development

Authority:	Miami-Dade County

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Capital Expenditure:	$200 million
Commercial Arrangement:	Under a 90-year lease of the space above the county bus station, Genting will spend $16 million on upgrades to the transit stop and pay Miami-Dade $10 million in cash before it builds a 36-story hotel above the depot.
Term:	90-year lease
Funding and Financing Sources:	Developer investment
Key Parties:	The Genting Group, Genting subsidiary Resorts World, Miami-Dade County, City of Miami
Current Status:	The project is currently under construction.
Additional Notes:	The deal with Genting would produce nearly $55 million in revenue for Miami-Dade County. Genting would redevelop the bus terminal, renovate the Metro mover station, and build its proposed hotel over the ground-level terminal.

C.5 Boston Copley Place

The Copley Place project site is located at 100 Huntington Avenue, at the border of the South End of Boston. This area of Boston, also called Back Bay, is an example of sourcing funds for development from private financing and joint development. The Copley Place Development was initially built on air rights above the Boston Extension of the Massachusetts Turnpike in the early 1980s. The Simon Property Group filed a Project Notification Form proposing an expansion to the Copley Place Development in 2008. The proponent updated the plans for the project in 2011 and later in the same year, the Boston Redevelopment Authority (BRA) Board approved the expansion project.

The site occupies the southwest corner of Stuart and Dartmouth Streets, and currently functions as a large brick-paved entry plaza for Neiman Marcus and Copley Place. The original Copley Place Development had a considerable amount of retail space compared to what was eventually built.

Under the Copley Place Retail Expansion & Residential Addition Project, the design will transform the brick-paved plaza entrance to Neiman Marcus into a multi-story atrium with a glass façade, welcoming pedestrians into an indoor garden with programmed activities and channeling visitors and shoppers to the retail stores.

Copley Place Retail Expansion & Residential Addition Project

Authority:	BRA Board
Capital Expenditure:	$500 million
Commercial Arrangement:	This private investment project will provide 1,700 construction jobs and the proponent will create a minimum of 71 affordable housing units on site. The Simon Property Group committed, at a minimum, to develop a landscape plan for the Southwest Corridor Park that incorporates active uses along with a $250,000 contribution to the Southwest Corridor Park Conservancy. The proponent has also committed a minimum of $1 million towards new public art and $250,000 to the Friends of Copley Square. The project will generate approximately $7.2 million in annual property tax revenue.
Term:	Not applicable
Funding and Financing Sources:	Private investment

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Key Parties:	Simon Property Group, BRA, established by the Boston City Council and the Massachusetts Legislature), Copley Place Expansion Citizens Advisory Committee (CPECAC, made up of residents, business owners, community organizations, and professionals)
Current Status:	The project has reached financial close and is currently under construction.
Additional Notes:	The Copley Place Development was initially built on air rights above the Boston Extension of the Massachusetts Turnpike in the early 1980s. The redevelopment and expansion to the Copley Place Development includes approximately 115,000 square feet of new retail and restaurant space (54,000 square feet added to the Neiman Marcus store and 60,000 square feet of additional retail and restaurant space). The expansion also includes the addition of approximately 660,000 square feet of new residential space, comprising of 542 housing units, as well as improvements to the public realm surrounding the Copley Place Development near Dartmouth and Stuart Streets and the creation of a more welcoming entrance from the Southwest Corridor.

C.6 Portland Airport Max

The Airport MAX project is a 5.5-mile light rail extension to Portland's existing Red Line, connecting Downtown Portland to the Portland International Airport (PDX). The extension opened to revenue service in 2001 as the first train-to-plane transit service on the West Coast. The project is an example of sourcing development funding through private financing as the deal was executed through a unique public-private partnership (key parties including the City of Portland, Port of Portland, Tri-County Metropolitan Transportation District of Oregon [TriMet], and Bechtel), which delivered the project under budget and within just five years.

Cascade Station is located within the Airport Way Urban Renewal Area, which functions as a form of TIF. Taxes over the base amount are collected by the City of Portland and reinvested in the area. The City of Portland issued $23.8 million in bonds for its portion of project costs, backed by incremental revenues from the Airport Way Urban Renewal Area.

The airport was able to fund its $28.3 million portion through its Passenger Facility Charge (PFC). At the time, the PFC was a flat $3.00 fee that airlines paid to the airport for each passenger that boarded a plane at PDX. Revenues from the PFC can only be used for designated purposes that are approved by the Federal Aviation Administration. The Federal Aviation Administration granted special approval for the funds to be used for the extension.

Airport MAX Red Line (Extension)

Authority:	TriMet/City of Portland
Capital Expenditure:	$125.8 million
Commercial Arrangement:	Design-Build. Bechtel Enterprises funded $28.2 million (23 percent) of the $125.8 million project costs, delivered the Extension under a design-build contract, and received an 85-year rent-free lease to develop a 120-acre mixed-use commercial site near the airport.
Term:	85-year lease

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Funding and Financing Sources:	Local: • City of Portland issued bonds backed by TIF revenues $23.8 million • TriMet used their General Funds (payroll and self-employment taxes) $45.5 million • Port of Portland Airport PFC Revenues $28.3 million Private: Bechtel $28.2 million (thru Bechtel/Cascade Station Development Company, LLC, a private consortium of Bechtel and Trammell Crow)
Key Parties:	City of Portland, Port of Portland, TriMet, Bechtel
Current Status:	The project is currently operational, and construction is completed.
Additional Notes:	The project was built through a unique public-private partnership, which delivered the project under budget and within just 5 years. Bechtel Enterprises received an 85-year, rent-free lease to develop the 120-acre mixed-use commercial site near the airport in return for funding 23 percent of project costs and delivering the project through a design-build contract. The City of Portland funded its portion of project costs by using a form of TIF.

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