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Port Economic Analysis

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GLOSSARY

ADCCED	Alaska Department of Commerce Community and Economic Development
ADOT&PF	Alaska Department of Transportation and Public Facilities
AIDEA	Alaska Industrial Development and Export Authority
AMHS	Alaska Marine Highway System
AML	Alaska Marine Lines
CAGR	Compound Annual Growth Rate
CLIA	Cruise Line International Alaska
CPI	Consumer Price Index
CPV	Commercial Passenger Vessel
ft	Feet
FY	Fiscal Year
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GT	Gross Tonnage
IMF	International Monetary Fund
LOA	Length Overall
m	Meter
m ²	Square Meters
MOS	Municipality of Skagway
MSI	Mineral Services Inc.
MT	Metric Tonnes
NOAA	National Oceanic and Atmospheric Administration
SBH	Small Boat Harbor
TEU	Twenty-Foot Equivalent Unit
TGS	TEU Ground Slots
Tonnes	Metric Tonnes
USD	United States Dollar(s)
WP&YR	White Pass and Yukon Route
YTD	Year to Date

1. EXECUTIVE SUMMARY

Existing sales, bed, and CPV Excise taxes comprise 68% of the total revenues to the Municipality of Skagway. An increase or decrease in cruise and independent travellers to Skagway can affect these revenues. This evaluation examines three scenarios (cases) and the resultant changes to the Municipality's finances:

1. The **constrained case scenario** estimates a reduction in cruise passengers because of the inability to accommodate larger cruise vessels expected to come online in the near future. This scenario is estimated to result in an annual potential loss of 40,000 cruise passengers, increasing over the 20-year forecast to losses of 132,000 cruise passengers by FY2037. Potential lost revenues to the Municipality are \$14.8 million over the 20-year forecast.
2. The **unconstrained case scenario** assumes a full capture rate of all cruise passengers and the subsequent revenues as a result of improved infrastructure at the Port of Skagway, allowing the larger ships to call at the Port.
3. The **project case scenario** examines the potential for continued ore exports from Skagway after FY2019 when the current exports are expected to cease. Based on the possibility of a new mine coming online, such as the proposed Casino Mine, potential ore exports out of Skagway could be in the range of 74,000 MT annually. Under the current lease agreement, this would not affect revenues to the Municipality.

This evaluation additionally examines the potential financial effects of the draft WP&YR lease. Had the draft WP&YR lease of June 2015 gone into effect, the Municipality could have increased current net revenues of \$304,000 to \$512,000 annually. If the Casino Mine were to come on board, under the draft lease agreement, the Municipality could gain an additional \$148,000 in revenues from a \$2 per ton fee for ore product crossing the Ore Dock.

A risk assessment of the underlying assumptions for this modelling effort reveals that doubling the loss of cruise passengers results in additional losses of \$14.8 million (in addition to the \$14.8 million in the constrained case) for a total loss over the 20-year timeframe of \$29.6 million. Alternatively, in an unconstrained scenario, increasing the cruise ship passenger forecast slightly from the CLIA predictions results in additional revenues to the Municipality of \$23.7 million over the 20-year forecast.

Cruise industry trends, stable economic conditions for the US and Canada, and Alaska's attractiveness as a tourist destination will continue to drive Skagway's finances. The modelling effort described here can be used for additional scenarios as the Municipality of Skagway continues to evaluate future lease agreements and changes to the industries driving the Skagway economy.

2. ECONOMIC ANALYSIS

2.1. INTRODUCTION

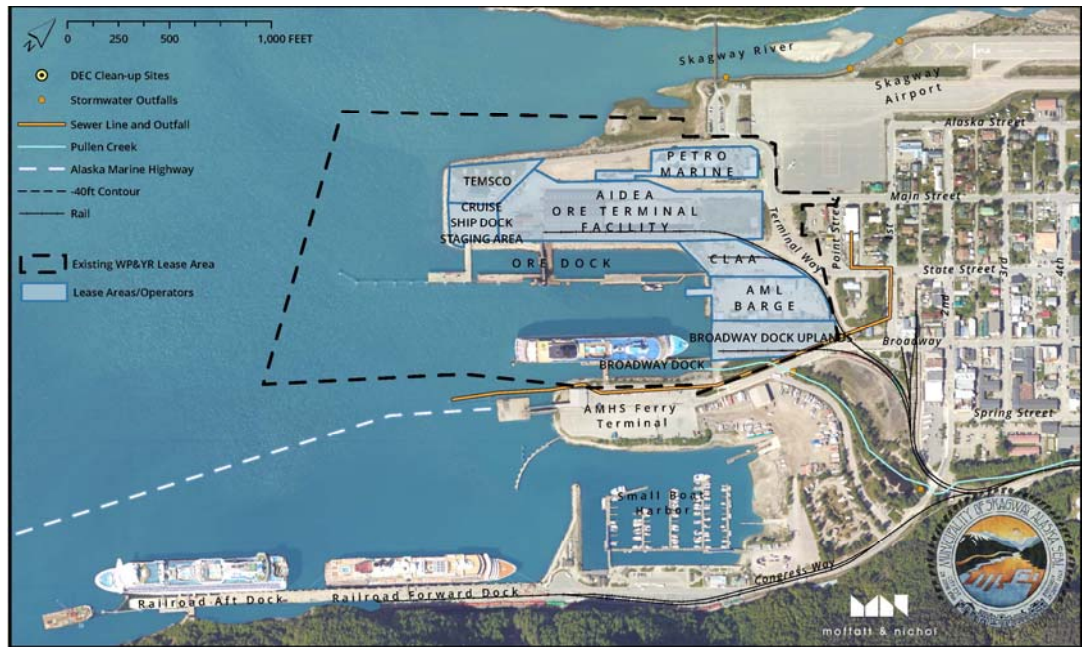
The Skagway Port Steering Committee requested the Moffatt & Nichol (M&N) commercial team to develop an Economic Analysis report for the Port. The report includes a review of previously published data along with financial records obtained from the Municipality of Skagway (Municipality or MOS). This economic analysis begins by looking at existing/historical conditions as they pertain to waterfront activity, then examines in turn:

- a *Constrained* case where the MOS is unable to fully accommodate larger class cruise vessels,
- an *Unconstrained* case where the larger class cruise ships can dock at Skagway, and
- a *Project* case where commodity shipments expand with the opening of a mine operation that utilizes Skagway for concentrate ore exports.

A summary examining these three scenarios is included along with an evaluation of the changed conditions to the revenues and expenses of the Municipality of Skagway if the previously proposed White Pass & Yukon Route (WP&YR) draft lease were to be implemented.

2.1.1. AREA OF STUDY

Figure 2.1 below shows the area of study considered for this report, focused on the waterfront areas of the Municipality. The area within the black dotted line is the current WP&YR lease area. Additional detail as to what other activities are currently taking place within different parcels of the overall WP&YR lease area are shown in light blue. Of these areas, Petro Marine Services, TEMSCO, Alaska Industrial Development and Export Authority (AIDEA), and Alaska Marine Lines (AML) Barge are all under subleases with WP&YR. As part of the economic analysis, the impact of the activities at the Small Boat Harbor (SBH) and the Alaska Marine Highway System (AMHS) Ferry Terminal were also considered.



Source: NOAA, OpenStreetMap, MOS

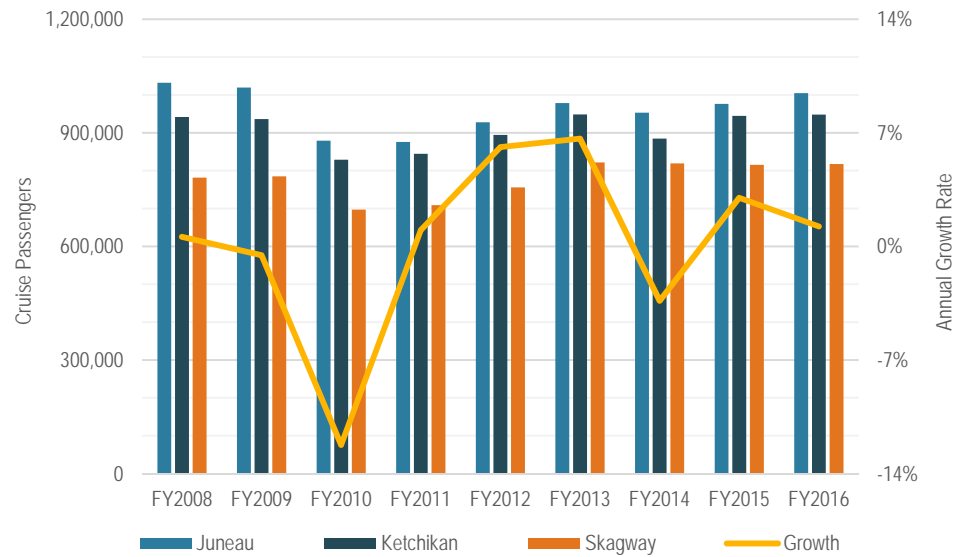
FIGURE 2.1: SKAGWAY PORT AREA

2.2. EXISTING/HISTORICAL CONDITIONS

2.2.1. TOURISM

2.2.1.1. Cruise Visitors

The number of cruise visitors to Skagway, Alaska remained relatively unchanged between FY2007 and FY2016. Using data available from the Alaska Department of Commerce, Community, and Economic Development (ADCCED), yearly cruise passenger estimates were obtained for the FY2007-FY2016 time period and are shown in Figure 2.2. The average annual growth rate of cruise passengers to Skagway over this period was approximately -0.05%, with 820,829 visitors in FY2007 and 817,308 in FY2016. In comparison, Ketchikan and Juneau had average annual growth rates between FY2007 and FY2016 of 0.56% and -0.14%, respectively, both of which handled larger numbers of cruise passengers than Skagway. Ketchikan saw 947,972 cruise passengers in FY2016 while Juneau saw 1,004,774 passengers. For a majority of the Alaskan ports listed in the report provided by the ADCCED, there was essentially no growth over the 2007-2016 period which can be roughly defined as a period of decline in cruise passengers followed by a steady increase back to pre-existing levels.



Source: Alaska Department of Commerce, Community, and Economic Development (ADCCED)

FIGURE 2.2: CRUISE PASSENGERS AND COMBINED ANNUAL GROWTH, FY2008-FY2016

The number of crew members followed a similar trend as it was assumed that the ratio of passengers per crew member stays relatively constant over time. Looking at historic data from the Skagway Convention & Visitors Bureau, a ratio of 2.4 passengers per crew member was assumed for crew estimates (i.e. for every crew member there are 2.4 passengers).¹ The ratio resulted in an estimate of approximately 340,545 crew members in FY2016, a slight decline from the 342,012 that visited Skagway in FY2007. Crew members are included in our evaluation given their ability to contribute to spending within the town and account for a portion of the sales tax revenue collected by the Municipality.

¹ Email from the Skagway Convention and Visitors Bureau: Numbers for cruise line crew come from the arrival paperwork each ship submits to Customs on arrival at the port. Customs also provides statistics on highway arrival numbers, with the exception of buses. That information comes from WP&YR. CLAA does not provide any statistical information other than the ship arrival schedule.

2.2.1.2. *Independent Visitors*

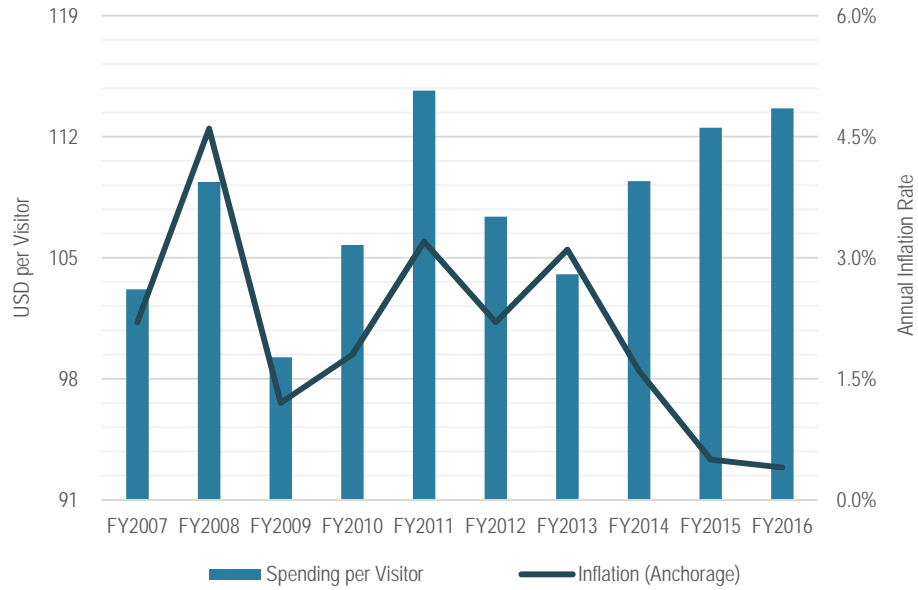
Independent visitors to Skagway were estimated as those non-resident visitors and out-of-state vehicles that were traveling via the Alaska Marine Highway System. Using available information from the State of Alaska Department of Transportation and Public Facilities (ADOT&PF) and previous research from the McDowell Group, Skagway saw approximately 7,449 disembarking visitors and 1,811 out-of-state vehicles in FY2016. This compares to 7,418 visitors and 1,632 out-of-state vehicles in FY2007 and results in an average annual growth rate during the FY2007-FY2016 period of about 0.3%. The period can be generally defined as one with little growth and relatively high year-to-year volatility. The independent visitor sector does not appear to follow the trends of the cruise industry and, as a result, was modelled separately.

2.2.1.3. *Spending Patterns*

Spending patterns among the group of consumers consisting of cruise passengers, crew members, and non-resident independent visitors has been on an upward trajectory since FY2007. By estimating sales tax revenue generated during the summer season and spending attributed to non-residents of Skagway, the estimated spending per visitor in FY2016 was found to be approximately \$114 on retail taxable items.² This compares to a FY2007 value of \$103 and results in an average annual growth rate of 1.08%. The growth rate in spending, however, is barely above growth which can be attributed to inflation. By taking the estimate for FY2007 and applying the rate of inflation for the Anchorage metropolitan area from FY2008-FY2016, spending in FY2016 would be approximately \$113 per visitor, as shown in Figure 2.3. This result implies that spending per visitor has just kept pace with inflation and has not necessarily been the product of any growth in the tourism industry. The only exception to this observation is in the most recent years from FY2014 to FY2016, in which spending habits have increased faster than that of inflation. Changes to the spending habits of tourists to Skagway in the future will certainly be dependent on the growth in the cruise industry and economic well-being of the passengers.

In addition to retail spending in the community, independent travellers spend funds on hotel and lodging within the community which are subject to bed taxes of 8%. Using the AMHS non-resident passenger and vehicle traffic assumptions mentioned earlier, we assume modest growth for the independent visitor traffic of 0.5% over time. These independent visitors are assumed to spend at least one night of lodging at Skagway and the resultant 8% bed tax is included in revenues. Bed tax revenues have ranged from approximately \$146,023 (FY2007) to \$161,763 (FY2015), and averaged \$154,257 from FY2007 to FY2016.

² Generally speaking, crew members are probably spending less than cruise passengers on retail items and independent travelers are spending more when room and lodging fees are included. Bed taxes from independent travelers are covered in a subsequent section and modeled separately.



Source: Bureau of Labor Statistics (BLS), M&N

FIGURE 2.3: AVERAGE SPENDING PER VISITOR AND INFLATION RATE FOR ANCHORAGE METROPOLITAN AREA, 2007-2016

2.2.2. COMMODITIES

2.2.2.1. Overview

AML is a tug and barge company providing weekly service to Skagway. The predominant method of freight transportation to Skagway is by barge. Transports include helicopters, locomotives, and vehicles along with everything that can be purchased in local stores. The company constructed the container barge facility at the head of the Ore Dock in 2001. Barges come in about once a week and occasionally carry heavy construction type equipment into the port. AML not only serves Skagway but also the Yukon. An affiliated company is Canadian Lynden, currently transporting copper mine concentrate from Yukon to Skagway.

The biggest challenge for AML is the need for self-facilitated expansion. Typically, throughout southeast Alaska, AML will provide their own equipment for delivering cargo if they need truck access and additional storage space. The Port of Seattle may have third party companies assisting in docking and unloading, but in Alaska, barges take on those responsibilities. If they have need for a crane to unload, they will load a crane onto the barge for delivery to the community.

Petro Marine Services (d.b.a. Harbor Marine Services Inc.) provides fuel delivery services to Skagway and the Yukon Territory. The service coordinates deliveries around cruise ship landings and currently receives deliveries roughly every 3-4 weeks.

Petro Marine has trucks delivering fuel daily to the Yukon Territory.

Petro Marine operates two barges in Southeast Alaska and their pipeline is at the Ore Dock. One potential issue is that rerouting fuel lines is not easy to execute while the company is operating. This implies that any construction at the Ore Dock would need to be able to accommodate Petro Marine's operations as well.

The current user of the Ore Dock is Minto Explorations Ltd., a subsidiary of Capstone Mining Corp. (previously Sherwood Copper Corp.). The user came under contract with Mineral Services Inc. (MSI) to operate and maintain the terminal in April 2008. Capstone will continue operating the Minto Mine through 2019.

2.2.2.2. Ore Concentrate

Ore concentrate through the Port of Skagway is dependent on mining activity in the Yukon Territory of Canada. Historical volumes, provided by Mineral Services Inc., going back to 1970 show periods of steady volume followed by mine shutdowns and start-ups, when volume through the Ore Dock can drop to zero and back up within a year or two. Years of volume greater than zero from 1970 to 2016 fluctuated from a high of 642,000 metric tons to a low of 7,000 metric tons. The current mine operations consist of Minto Explorations which send copper through the Port. Excluding 2007 as a start-up year of low volume, the average annual growth rate from 2008-2016 was 5.54%, with some fluctuations in the year-to-year growth rates as high as 60.20% and low as -23.08%. Given mine output and the fluctuations of copper prices in the global market, commodity movements through the Port for ore concentrate are expected to follow relatively volatile paths. Minto Explorations, Ltd. is expected to continue production through 2019 at which point Skagway's Ore Dock will be dependent on a new source of ore concentrate from the Yukon Territory. In addition to concentrate moving over the Ore Dock, AML also handled approximately 77 metric tons of ore concentrate unitized in "Ore Pots" in 2016, a 185% increase over their 2015 volumes. Based on information from AML, this was primarily lead and zinc concentrate from the Keno Mine which may start again next year. The "Ore Pots" are also used to move small volumes of silver ore concentrate for Alexco.

2.2.2.3. Fuel

Petro Marine handles products such as diesel fuel, gasoline, jet fuel, and aviation gasoline. These products support activity taking place within the Port as well as any construction activity occurring further inland within the Yukon Territory. Historical data of the products listed above are provided from Petro Marine and is available for the more recent years of 2013 through 2016. Following the sinking of the Ferry Float in 2014, Petro Marine did not provide fuel to the Alaska Marine Highway from April 2014 through May 2015, resulting in a relatively precipitous drop in volume followed by rapid increase in 2016 (e.g. diesel fuel jumped by 122.40%). Jet fuel and aviation gasoline, however, would not have been affected by the incident and offer growth rates which may more accurately reflect the relative health of activity within the port, primarily the airport. Average annual growth for the combination of these two products was approximately 18.18% for the 2013-2016 time period and are expected to continue to grow. Diesel fuel and gasoline are also expected to grow, with a majority of volume anticipated to be shipped to the Yukon Territory for various industrial activities.

2.2.2.4. Merchandise

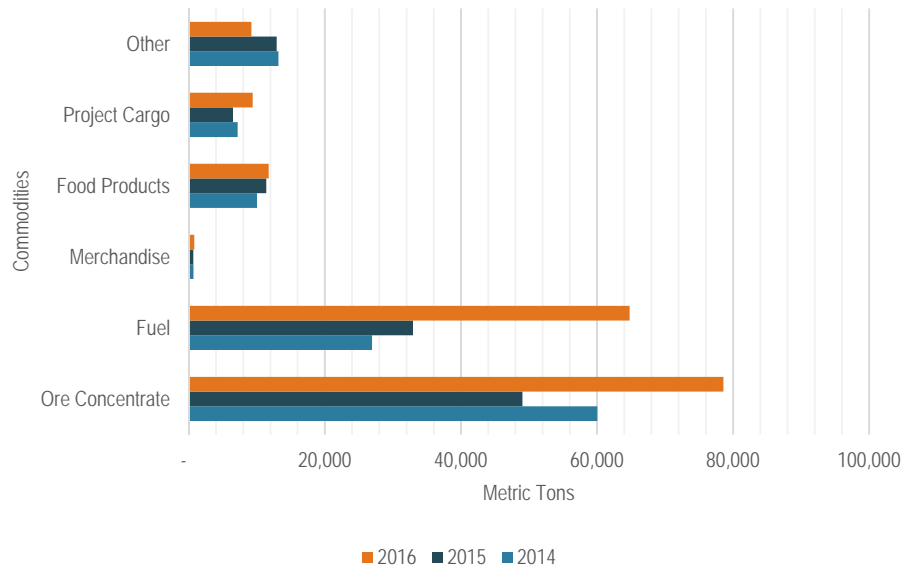
Using a broad definition of consumer goods and subtracting out food products, merchandise volume can be estimated from data provided by AML. Approximately 798 metric tons of merchandise was shipped into Skagway in 2016 while only 15 metric tons was sent out in the same year, consisting of primarily household goods. The greater volume of inbound merchandise consisted primarily of department store merchandise which is most likely driven by the tourist spending within Skagway. The average annual growth rate for inbound merchandise was approximately 9.26% from 2014 to 2016, the years in which data is readily available.

2.2.2.5. Food and Food Products

Food products are also considered under the consumer goods category and represent a larger share by volume than that of merchandise. Approximately 11,435 metric tons of food and food products were shipped into Skagway in 2016 via AML. These products grew at an annual average rate of approximately 8.37% from 2014-2016 and consisted primarily of alcoholic beverages. Alcohol supports the restaurant and bar industry which grows with the expansion in the cruise sector and independent visitors. Other food products include groceries and miscellaneous food items, which are heavily influenced by the tourism industry as well as growth in local population.

2.2.2.6. Project Cargo

Project cargo was estimated by taking into account building material that moves in and out of Skagway (i.e. cargo directly related to project activity within Skagway and the Yukon Territory or construction material in general). The top inbound items in 2016 to Skagway were cement, iron, and modular building units. All inbound building materials equated to approximately 9,381 metric tons in 2016. Outbound freight was sparse when compared to inbound freight. Outbound project cargo reported less than one metric ton of cement in 2016, being the only represented product in a category that is almost non-existent. Figure 2.4 depicts a summary of the commodities throughout the Port.



Source: Alaska Marine Lines (AML), Petro Marine Services, Mineral Services Inc.

FIGURE 2.4: COMMODITIES THROUGH PORT OF SKAGWAY, 2014-2016

2.2.3 ALASKA MARINE HIGHWAY

AMHS provides an important marine link for Southeast Alaska communities such as Skagway. Smaller communities with limited healthcare resources rely on AMHS for access to health care in larger population centers like Juneau and Anchorage. This is particularly critical for Skagway where flights are often cancelled due to inclement weather. AMHS also allows students in Alaska’s coastal communities to visit other schools for a variety of purposes such as sports, leadership development, drama/debate, and arts related events³.

The facility includes a parking lot, waiting-room and office-building, and a floating dock which is owned jointly with the City.



Source: Courtesy Lorraine Cordova January 2017

FIGURE 2.5: SKAGWAY FERRY TERMINAL

As of 2017, there are four AMHS ferry vessels serving the Municipality: M.V. Columbia, M.V. Fairweather, M.V. LeConte, and M.V. Matanuska. Except for the fast-ferry Fairweather, all AMHS ferries serving Skagway are more than 40 years old (See

Table 2.1). The ADOT&PF and Vigor Industrial have an agreement to construct two Day Boat Alaska Class Ferries in Ketchikan. These ferries will be 280 feet long, seat up to 300 passengers, and will carry 53 standard vehicles. Each ferry will feature bow and stern doors for quicker loading and unloading, will have fully enclosed car decks, and controllable pitch

³ *Economic Impacts of Alaska Marine Highway System prepared by the McDowell Group, January 2016.*

propellers to maximize manoeuvrability and efficiency. The first vessel construction is well underway and both vessels are scheduled for delivery in late 2018.⁴

TABLE 2.1: AMHS FERRY VESSELS SERVING SKAGWAY IN 2017

Vessel	Year Built	Passenger Capacity	Vessel Capacity (20-feet)	# of Staterooms
M.V. Columbia	1974	600	134	103
M.V. Fairweather	2004	250	36	-
M.V. LeConte	1974	247	34	-
M.V. Matanuska	1963	499	88	106

Source: The Economic Impacts of the Alaska Marine Highway System prepared by the McDowell Group for the Alaska Marine Highway System, January 2016.

2.2.3. PASSENGER TRAFFIC

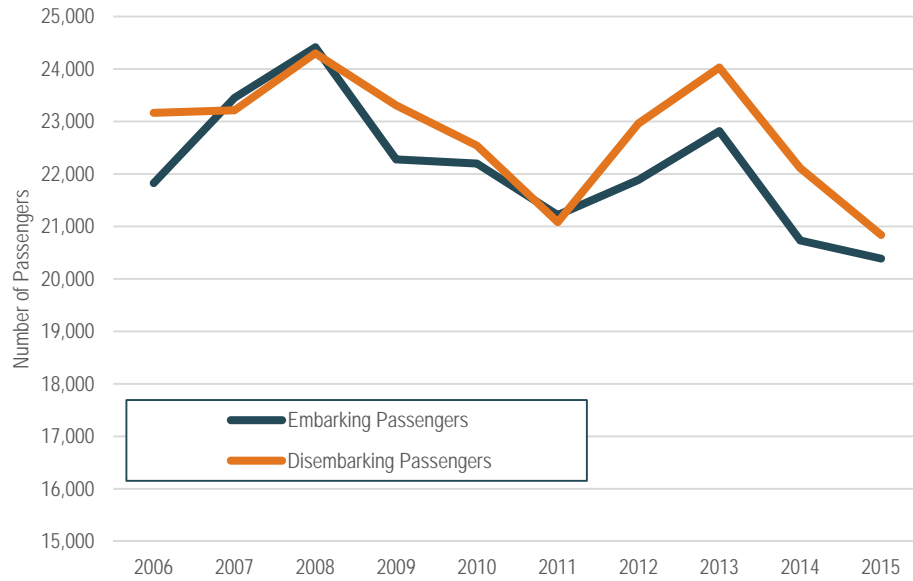
Annual passenger traffic on the AMHS averaged about 22,120 embarking and 22,754 disembarking from 2006 to 2015. There were notable dips in passenger traffic in years 2011, 2014, and 2015⁵, as shown in Figure 2.6.

According to the Economic Impacts of the AMHS report of January 2016⁶, 68% of passengers are Alaska residents while 32% are non-residents. For purposes of the Skagway model, we are assuming that the non-residents are independent travellers to Skagway, who are there to enjoy the tourist offerings. This means that about 7,500 passengers on the AMHS are independent travellers to Skagway.

⁴ State of Alaska Marine Highway System – Alaska Class Ferry Project - http://www.dot.state.ak.us/amhs/alaska_class/index.shtml

⁵ Alaska Department of Transportation and Public Facilities – Alaska Marine Highway System – 2015 Annual Traffic Volume Report.

⁶ The Economic Impacts of the Alaska Marine Highway System prepared by the McDowell Group for the Alaska Marine Highway System, January 2016.



Source: Alaska Department of Transportation and Public Facilities – Alaska Marine Highway System – 2015 Annual Traffic Volume

FIGURE 2.6: SKAGWAY PASSENGER TRAFFIC – 2006 THROUGH 2015

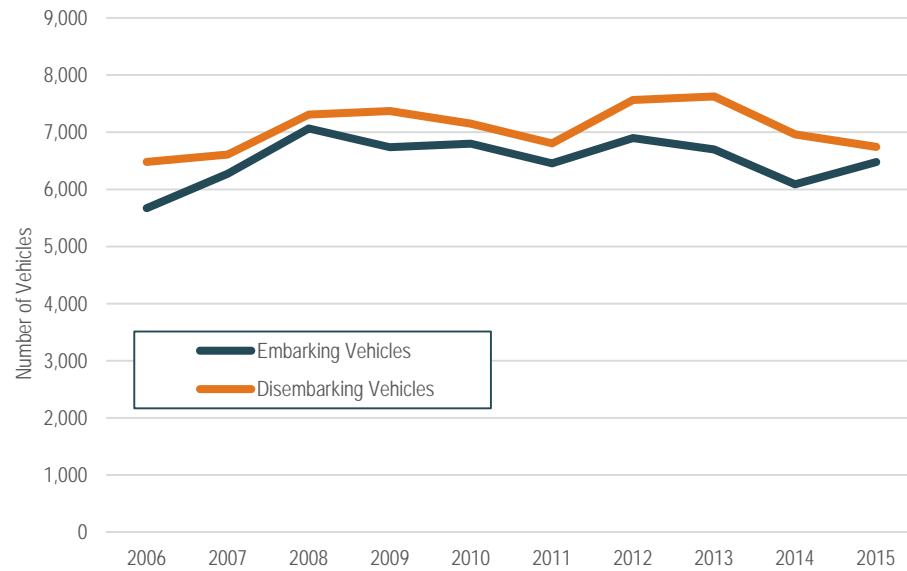
2.2.4. VEHICLE TRAFFIC

Annual vehicle traffic at Skagway has averaged 6,517 embarking vehicles and 7,062 disembarking from 2006 through 2015. Similarly to passenger traffic, there were dips in the number of vehicles in 2011 and 2014⁷ as shown in Figure 2.7.

The Economic Impacts report⁸ shows that 75% of the vehicle traffic to Skagway is Alaska residents and 25% is non-resident traffic. For purposes of the Skagway Waterfront model, we are assuming that the non-resident traffic on the AMHS is independent travellers enjoying the tourist offerings. This means that about 1,800 additional tourists are arriving in Skagway annually by vehicle on the AMHS. See Table 2.2 for historic passenger and vehicle traffic along with annual ferry port calls.

⁷ Alaska Department of Transportation and Public Facilities – Alaska Marine Highway System – 2015 Annual Traffic Volume Report.

⁸ The Economic Impacts of the Alaska Marine Highway System prepared by the McDowell Group for the Alaska Marine Highway System, January 2016.



Source: Alaska Department of Transportation and Public Facilities – Alaska Marine Highway System – 2015 Annual Traffic Volume Report

FIGURE 2.7: SKAGWAY VEHICLE TRAFFIC ON AMHS – 2006 THROUGH 2015

TABLE 2.2: AMHS HISTORIC PASSENGER AND VEHICLE TRAFFIC

Skagway traffic	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	10-yr Average
Embarking Passengers	21,826	23,450	24,413	22,276	22,197	21,216	21,885	22,817	20,732	20,385	22,120
Disembarking Passengers	23,164	23,212	24,297	23,307	22,539	21,081	22,962	24,025	22,110	20,838	22,754
Embarking Vehicles	5,672	6,273	7,067	6,737	6,800	6,454	6,897	6,698	6,088	6,479	6,517
Disembarking Vehicles	6,481	6,609	7,310	7,371	7,150	6,806	7,563	7,627	6,962	6,745	7,062
Skagway Port Departures	311	266	320	298	287	310	276	312	256	264	290

Source: State of Alaska Department of Transportation and Public Facilities Alaska Marine Highway annual reports.

2.2.5. SMALL BOAT HARBOR

The Small Boat Harbor (SBH) is a full-service marina with moorage for pleasure and commercial vessels up to 150 feet in length overall. Transient moorage space is available. There is a waiting list for annual moorage for which potential users pay an annual fee.

Harbor amenities include seasonal potable water on all docks and seasonal restrooms and showers. There is a pump-out facility for holding tanks as well as garbage receptacles at each ramp. Electrical power is available at all docks.



A harbor crane with a 2- short ton (1,000 lbs.) capacity is available on the ferry float. Haul-outs for shallow draft vessels up to 20 tons and 40 feet are possible with a hydraulic trailer, and there is a tidal grid for larger vessels. A pressure washer is available for rent. Upland storage is available adjacent to the harbor, with power and water in some areas⁹.

2.2.5.1. Usage

The SBH is fully utilized, serving both local residents and the Yukon Territory for passenger boat traffic and small commercial craft. The harbor is heavily used for commercial activity in the summer, which is primarily tourism related. In winter, there is significant demand to haul commercial fishing vessels and pleasure craft to dry dock on an adjacent upland site. During the winter of 2008 over 40 vessels were in dry dock. Boat owners prefer winter storage in Skagway over other southeast locations because Skagway's winter climate has less rain and snow and is more temperate than either Haines or Juneau.¹⁰ The Alaska Department of Commerce Community and Economic Development describes Skagway as falling within the southeast maritime climate zone, characterized by cool summers, mild winters, and heavy rain throughout the year. This zone lacks prolonged periods of freezing weather at low altitudes and is characterized by cloudiness and frequent fog.¹¹

2.2.5.2. Rate Structure

The SBH has posted commercial user fees of \$1.80 for passenger loading and unloading, barge loading fees of \$0.50 per foot per day or \$5.00 per foot per month, launch ramp fees of \$20 daily or \$300 annually, and cruise vessel docking fees at the ferry float of \$200.

Non-commercial user fees include annual moorage of \$14 per foot, transient moorage of \$0.40 per foot per day and \$4.00 per foot per month, long-term storage of \$0.20 per square foot per month, kayak storage of \$7.00 per month per vessel, and additional fees for haul-outs, grid, boat launch, waiting list, pressure washer, and live-aboards¹².

The SBH revenues cover operating expenses plus about \$50,000 annual net revenues before depreciation (See Table 2.3: Skagway Small Boat Harbor Operations – FY13 to FY16). When depreciation is added to the expenses however, the SBH is operating at a loss. The depreciated losses can be considered the avoided savings for new capital investments and extraordinary repairs and maintenance. These expenditures have been covered in recent years with transfers from the Commercial Passenger Vessel (CPV) Excise tax fund.

⁹ Harbor information derived from the Municipality of Skagway Small Boat Harbor description: <http://www.skagway.org/harbor>.

¹⁰ Municipality of Skagway 2020 Comprehensive Plan prepared by Sheinberg Associates, February 2009.

¹¹ <https://www.commerce.alaska.gov/dcra/DCRAExternal/community/Details/2fa901e2-54a9-4807-9027-73982c3ba746>

¹² <http://www.skagway.org/harbor/page/rates>

TABLE 2.3: SKAGWAY SMALL BOAT HARBOR OPERATIONS – FY13 TO FY16

Operating Categories	FY13	FY14	FY15	FY16
Operating Revenues				
Revenue - Harbor Utilities	3,465	3,390	3,620	3,820
Revenue - Annual Moorage	46,008	48,563	50,578	49,862
Revenue - Haul Out	12,270	12,895	14,184	18,005
Revenue - Launch Ramp Fee	3,269	4,146	3,540	3,851
Revenue - Lease and Rental	3,252	5,241	4,552	4,556
Revenue - Showers	1,164	1,749	1,292	1,877
Revenue - Storage	71,111	77,809	81,176	86,647
Revenue - Trans Moorage	48,691	39,453	43,901	35,919
Revenue - Commercial User Fees	69,059	86,687	98,841	109,207
Other Revenue	9,558	11,182	12,422	10,019
Total Operating Revenues	267,846	291,114	314,105	323,763
Operating Expenses				
Expense - Insurance	13,285	14,147	24,054	15,582
Expense - Administrative	8,767	9,378	9,109	19,496
Expense - Employee Payroll	25,876	26,519	26,460	26,603
Expense - GASB 68 Changes to Pension			36,205	
Expense - Health Insurance	9,319	10,790	12,758	12,586
Expense - Equipment	2,544	1,073	9,415	8,808
Expense - Repairs and Maintenance	14,131	15,238	16,133	19,767
Expense - Salaries	108,121	117,383	116,669	124,292
Expense - Utilities	23,724	31,913	37,484	44,449
Expense - Depreciation	541,470	777,122	721,868	725,549
Expense - Weather Radio	3,717	3,724	3,785	3,910
Other Expense	3,503	404	19,894	890
Total Operating Expenses	754,456	1,007,689	1,033,832	1,001,931
Operating Gain (Loss)	(486,610)	(716,576)	(686,897)	(678,168)
Operations before depreciation	54,860	60,546	34,971	47,381

Note: Not all operating categories are shown here but totals include all categories.

Source: Municipality of Skagway, Financial Department

Primary revenue sources for the small boat harbor are annual and transient moorage, storage fees, and commercial user fees. Primary expenditure categories include salaries and employee payroll, utilities, and the previously mentioned depreciation.

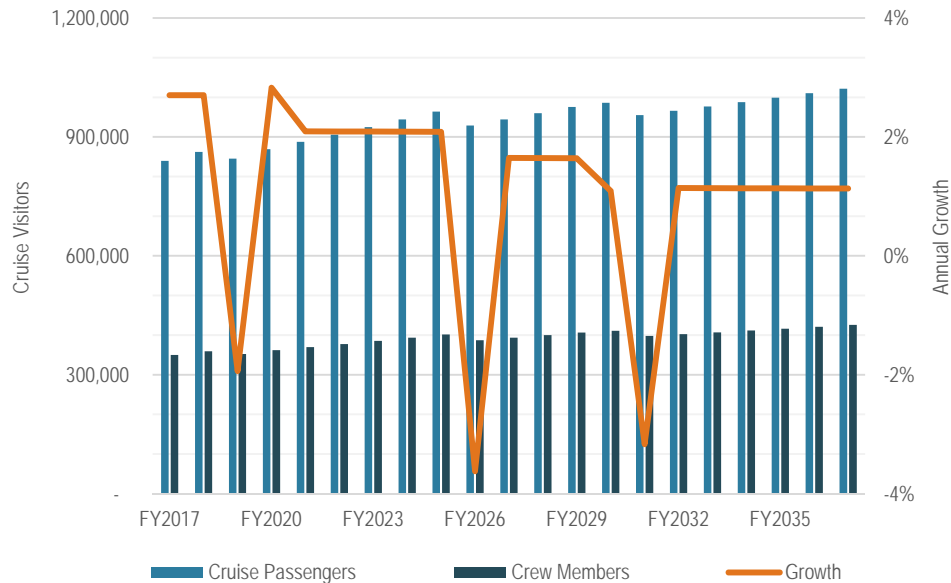
2.3. FUTURE CONDITIONS – NO CHANGE TO THE PORT (CONSTRAINED CASE)

Future conditions without a change to the port implies that the larger class cruise ships will be unable to dock at Skagway and they must rely on the smaller class vessels for visitor traffic. This also means that the ore terminal continues to function as is with no improvements to the shiploader. The White Pass Lease is also assumed unchanged post 2023 with ore dock shipments coming to an end with the closing of the Minto mine in 2020.

2.3.1. TOURISM

2.3.1.1. Visitors Forecast

M&N anticipates a growth rate of approximately 2.7% through FY2018 followed by a tapering to a long-run growth rate of 1.1% through FY2037. Intermediate drops in cruise passengers occurring in approximately FY2019, FY2026, and FY2031 represent years in which Skagway is expected to be unable to handle the larger cruise vessels as they come into service. Passenger numbers are expected to reach 986,103 visitors by FY2030 and 1,021,728 by FY2037. These estimates assume that there are no infrastructure upgrades to the Port and Skagway and they will be unable to accommodate all of the expected larger cruise ships. Some larger cruise ships will be able to dock at Skagway with scheduling adaptations and it is expected that smaller cruise ships will take advantage of open dock space at Skagway which will mitigate some of the losses of the larger cruise ships. In the constrained case, we estimate a 50% reduction of the passenger capacity of the large cruise ships (2,000 passengers per week to start), then escalating over time out to FY2037. Operations and capacity will continue as currently structured which will result in a loss of approximately 40,000 passengers annually beginning in FY2018 with losses continuing to grow due to the anticipated expansion vessel sizes in the cruise industry. These losses increase periodically during the 20-year timeframe and by FY2037, the loss is estimated to be 132,000 cruise passengers.



Source: M&N

FIGURE 2.8: PROJECTED CRUISE VISITORS TO SKAGWAY, CONSTRAINED CASE, FY2017-FY2037

The number of independent visitors is expected to increase at a more modest rate with an annual average growth rate of 0.5% over the next 20 years. The growth projection was derived from a slight increase over the average annual growth from the past ten years. This growth trajectory is not expected to deviate from its historical average and is less prone than the cruise industry to significant negative or positive shocks. Total independent visitors are anticipated to be 9,930 by FY2030 and 10,283 by FY2037.

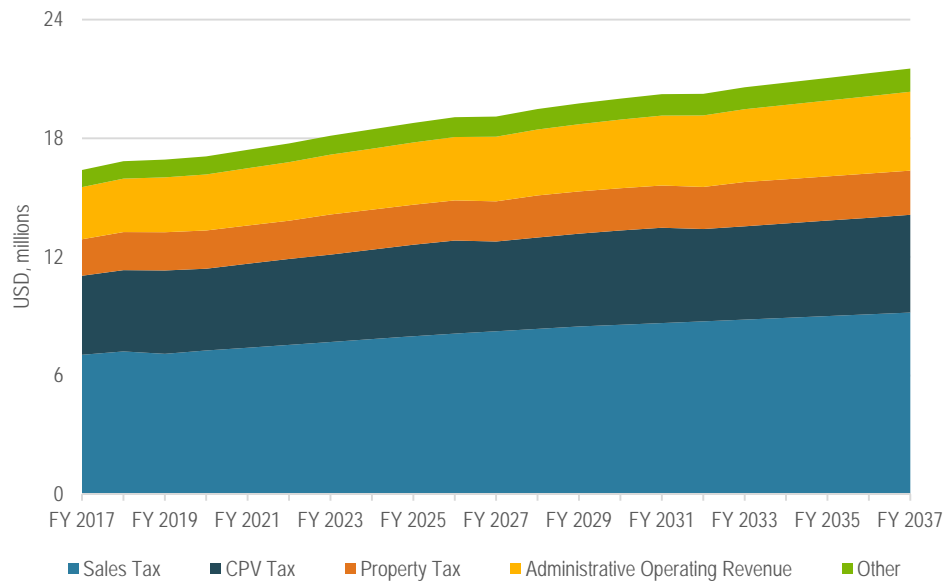
2.3.1.2. Revenues

Revenues to the municipality consist of taxable items and lease income as well as revenue generated from waterfront activities and Municipality services. Revenue from the SBH, lease income, and administrative operating revenue are generally expected to move with inflation and are modeled as such in the framework of the analysis. The revenues that are expected to move beyond inflation are the revenues from the sales tax, bed tax, CPV Excise tax, dock water usage, and property tax.

TABLE 2.4: ALL REVENUES - CONSTRAINED CASE, FY2017-FY2037

Revenue	FY 2017 (thousand \$)	Share of Total	FY 2037 (thousand \$)	Share of Total
Sales Tax	7,052	43.0%	9,183	42.7%
Bed Tax	161	1.0%	177	0.8%
CPV Excise Tax	3,996	24.4%	4,940	22.9%
Dock Water	131	0.8%	150	0.7%
Operating Revenue – Small Boat Harbor	331	2.0%	483	2.2%
Non-Waterfront Property Tax	1,425	8.7%	1,732	8.0%
Waterfront Property Tax	415	2.5%	505	2.3%
Seasonal/RV Park Lease Income	86	0.5%	130	0.6%
Port/Waterfront & Uplands Lease Income	157	1.0%	237	1.1%
Operating Revenue - Administration	2,638	16.1%	3,989	18.5%
Total	16,392		21,526	

Source: Municipality of Skagway, M&N



Source: Municipality of Skagway, M&N

FIGURE 2.9: PROJECTED REVENUES – CONSTRAINED CASE, FY2017-FY2037

Revenue generated from sales and CPV Excise tax account for the majority of revenue to the Municipality and are expected to maintain significance throughout the 20-year horizon. In FY2017, the sales tax and CPV Excise tax are expected to account for approximately 68% of all revenue to the Municipality, with the administrative operating revenue account for 16%, property tax accounting 11%, and other sources representing the remaining 5% of revenue.

The growth rate in sales tax revenue is forecasted to be driven by the growth rate of potential consumers in Skagway, a category consisting of cruise visitors, crew members, independent visitors, and local residents. From this potential demand, a value for average revenue generated per consumer was estimated from the historical data and applied to the future growth projections of the various components. The bed tax on the other hand, is expected to mirror the independent visitors arriving by ferry who are non-residents of Alaska as well as out-of-state vehicles. This tax was forecasted in a similar method as the sales tax. An average bed tax revenue generated per potential overnight guest was derived from the historical data and then applied to future projections of independent visitors who would need overnight accommodations.

Given the CPV Excise taxes characteristic of being a head tax (i.e. \$5.00 tax per cruise passenger), its movement over time will mirror that of cruise passengers. The CPV tax is also slightly different from other tax revenue in that the tax collected in the current year is based on cruise passengers from the previous year. This mechanism exists because the CPV Excise tax is collected by the State of Alaska and then redistributed at a later date. On average, 98% of cruise passengers are subject to the tax in any given year.

Dock water revenue is expected to trend with the growth in cruise passengers (i.e. a proxy for waterfront activity) but is forecasted to grow approximately one percentage point under that of cruise passengers¹³. It should be noted, however, that an increase in cruise capacity of larger vessels could lead to a reduction in dock water usage as larger vessels would result in fewer port calls and greater storage capacity on the vessels themselves. This would be a scenario in which more cruise passengers would lead to less use of the dock water. For each potential scenario, however, it is appropriate to use a growth rate that is pegged to the growth rate in cruise passengers but a fraction of the change. This low growth rate should suffice for projections into the 20-year horizon.

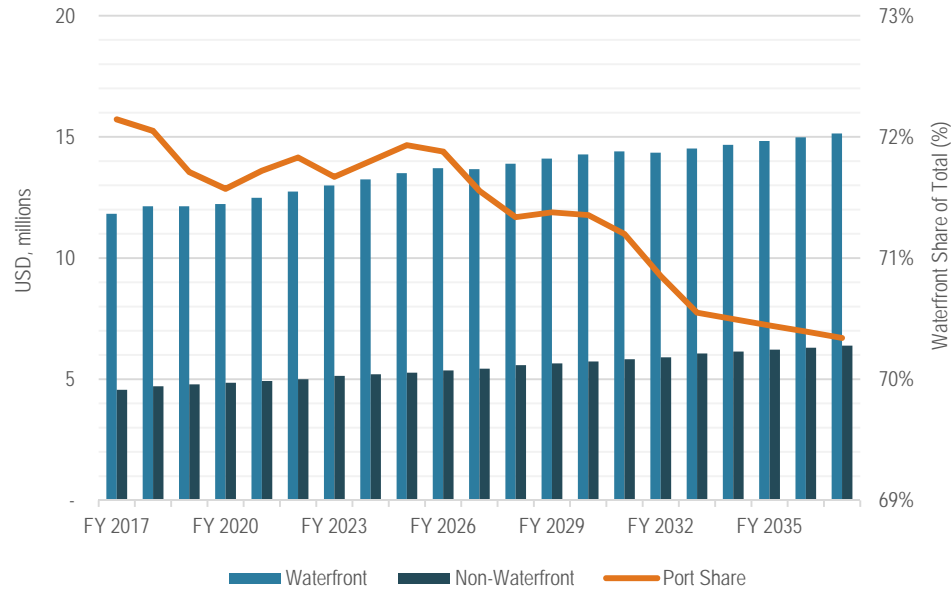
Revenue generated from property taxes is anticipated to increase over the 20-year horizon. This increase will coincide with the re-evaluation of property values taking place every five years. Property values will increase approximately 5% every five years beginning in FY2018. This value increase was applied to the revenue generated from the tax, resulting in a jump every five years within the model for both waterfront and non-waterfront property taxes.

After taking into account all revenue streams¹⁴, the sales tax and CPV Excise tax account for approximately 68% of all revenue to Skagway and are driven by the growth in cruise passengers. The share is anticipated to drop to 66% by 2037 despite growth within the cruise sector due to the anticipated loss in cruise capacity without improved facilities for larger cruise ships.

Waterfront-related activities, however, will still account for the majority of revenue to the Municipality and consist of everything from dock water revenue to the bed tax revenue generated from overnight visitors who come through the port. Waterfront-related revenue only includes the portion of sales tax that is attributable to visitors, estimated by taking sales tax revenue received by the Municipality during the summer season (i.e. April-September) and subtracting out that which can be attributed to the local population. The dominance of waterfront related revenues is intuitive, given the number of visitors through the Port as compared to the local population and limited economic activity that is unrelated to the Port.

¹³ An approximation based on the relationship between growth in the number of vessels from 2016 to 2017 and growth in number of cruise passengers

¹⁴ This analysis excludes grants or any returns from potential investment decisions.



Source: Municipality of Skagway, M&N

FIGURE 2.10: ALL REVENUES AND SHARE OF WATERFRONT-RELATED ACTIVITIES - CONSTRAINED CASE, FY2017-FY2037

2.3.1.3. Expenses

Expenses to the Municipality consist of those costs associated with waterfront and non-waterfront activity. Each expense category in this analysis is anticipated to steadily increase over time and move with inflation over the 20-year horizon. Waterfront-related expenses include CPV expenditures, operating expenses for the SBH, and the Port fund.

TABLE 2.5: ALL EXPENSES - CONSTRAINED CASE, FY2017-FY2037

Expenses	FY 2017 (thousand \$)	Share of Total	FY 2037 (thousand \$)	Share of Total
CPV Expenditures	2,328	20.6%	3,520	20.6%
Assembly Expenses	550	4.9%	832	4.9%
General Fund	6,097	53.8%	9,220	53.8%
Enterprise Fund (ex port)	1,274	11.3%	1,927	11.3%
Operating Expenses – Small Boat Harbor	1,029	9.1%	1,555	9.1%
Port Fund	45	0.4%	68	0.4%
Total	11,323		17,122	

Source: Municipality of Skagway, M&N

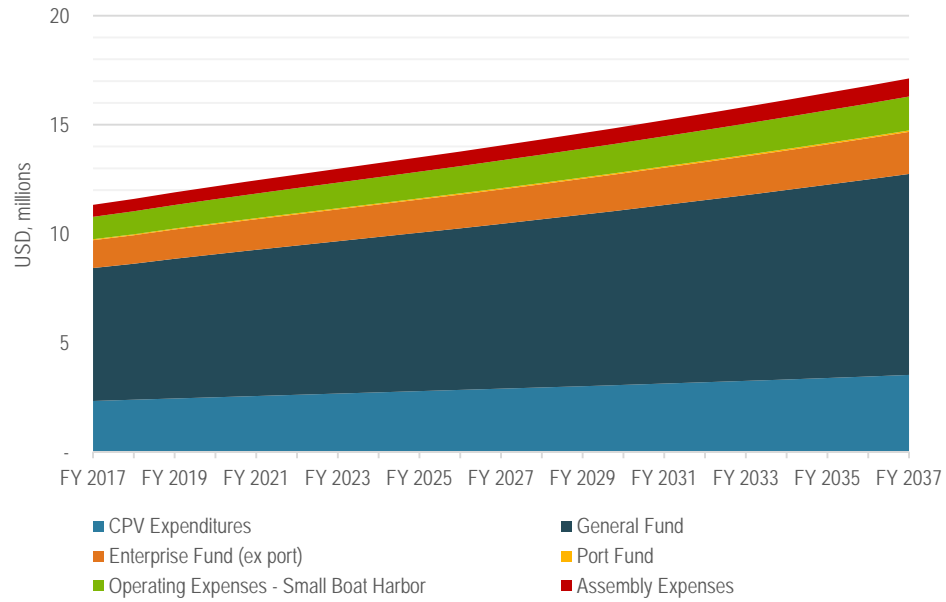


FIGURE 2.11: PROJECTED EXPENSES – INITIAL CONSTRAINED CASE, FY2017-FY2037

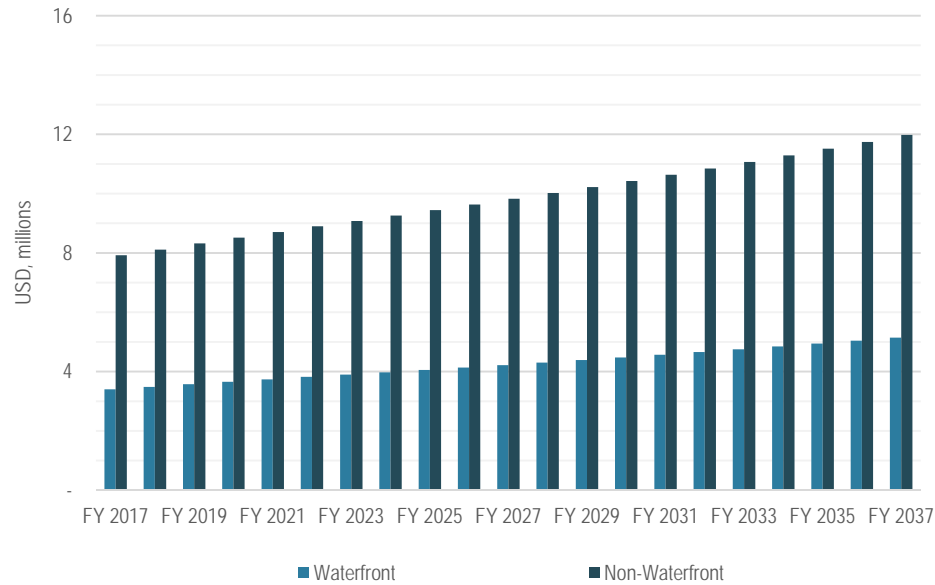
The expenses of the Municipality are expected to remain consistent in proportion to one another as they grow by the anticipated rate of inflation. The general fund currently accounts for approximately 54% of all expenses followed by CPV expenditures at 21%, the enterprise fund at 11%, and the remainder of expenses account for approximately 14% of expenses.

CPV expenditures are funds diverted from the CPV Excise tax revenue to various needs around the Municipality that support the waterfront and cruise industry. The spending typically remains below total revenue from the head tax and thus the Municipality has built up a positive balance over the years. Spending from the CPV account varies per year and is distributed among the various funds and expenses. In the constrained case, these expenses are expected to grow with inflation.

Operating expenses associated with the SBH are also expected to grow with inflation throughout the time horizon of this analysis. The SBH is currently operated by the Municipality and is limited in its opportunity for expansion. Additional projects may be in the process of being considered by the Municipality, however, the constrained case will assume current operations will continue into the future and expenses will gradually increase accordingly.

The Port fund is a subcategory of the enterprise fund but was taken out in order to break down the components of expenses into waterfront and non-waterfront related categories. The Port fund consists of those expenses that are directly related to the Port and corresponding activities. Given that the Municipality leases out a large section of the waterfront and does not necessarily handle expenses associated with an increase in activity – whether that be additional passengers or an increase in cargo flows – the assumption of a gradual increase with inflation seems appropriate for the case in which the current lease agreement is extended into the foreseeable future.

Non-waterfront activities account for around 70% of all expenses to the Municipality and are expected to move with the rate of inflation through the next 20 years. Also, given the Municipality is not directly responsible for a large portion of Port activity and leases out the operations to WP&YR, the expenses to the Municipality are relatively small as compared to expenses originating from land-based activities in Skagway. As previously mentioned, these expenses are anticipated to move with inflation and are not expected to experience large fluctuations in the scenario in which the current agreement between WP&YR and the Municipality is extended through the foreseeable future.



Source: Municipality of Skagway (MOS), M&N

FIGURE 2.12: ALL EXPENSES WATERFRONT & NON-WATERFRONT ACTIVITIES – CONSTRAINED CASE, FY2017-FY2037

2.3.2. COMMODITIES

2.3.2.1. Future Tonnage

Commodity projections were based on varying criteria for the different commodity groupings and pegged to projections of economic indicators or, in the case of volume through the Ore Dock, tied to specific mining projects that are anticipated to begin production sometime in the future. The economic indicators used for this analysis were Yukon GDP growth¹⁵, cruise passenger growth¹⁶, and US GDP growth¹⁷. The movement in these indicators were applied to different cargo flow projections depending on the potential influences that these indicators have on changes in volume handled.

¹⁵ Yukon Economic Outlook, 2017 published by the Yukon Department of Finance

¹⁶ Estimates from M&N

¹⁷ Future projections available from the International Monetary Fund (IMF)

TABLE 2.6: CARGO ASSUMPTIONS

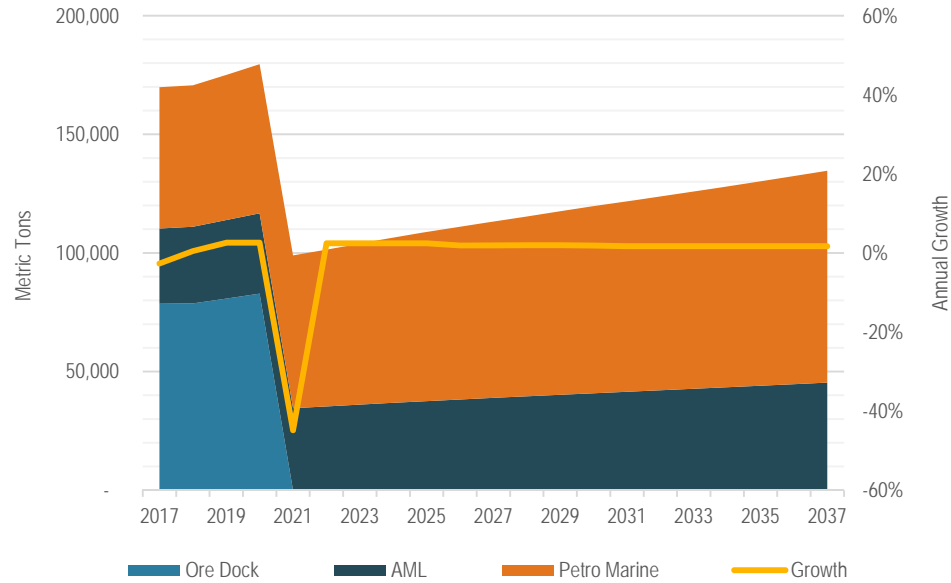
Data	Projected Growth	Source
Inbound Building Material, AML	Yukon GDP Growth	Yukon Economic Outlook, 2017
Inbound Consumer Goods, AML	Cruise Passenger Growth	Internal (M&N)
Inbound Other, AML	US GDP Growth	IMF
Outbound Building Material, AML	Yukon GDP Growth	Yukon Economic Outlook, 2017
Outbound Consumer Goods, AML	US GDP Growth	IMF
Outbound Ore Concentrate, AML	Yukon GDP Growth	Yukon Economic Outlook, 2017
Outbound Other, AML	US GDP Growth	IMF
Petro Fuel Services	Yukon GDP Growth	Yukon Economic Outlook, 2017, with exception of 2017 which is estimated on data from Jan-May
Ore Dock Volume	Minto Mine is expected to grow with Yukon GDP until shut down following 2020	Yukon Economic Outlook, 2017, Capstone Mining Corp

Source: M&N

Inbound and outbound volumes handled by AML are expected to expand accordingly as it relates to the type of commodity being handled. Inbound building material, outbound building material, and outbound ore concentrate are expected to grow with the forecasted GDP growth in the Yukon Territory of Canada. These materials are related to industrial activity within the territory and would be used as support to any projects within the Yukon. Ore concentrate, in particular, would be pegged to the relative success or failure of the overall mining sector in the Yukon, an economic activity that heavily influences the movement of GDP. Products transported for Petro Marine are also anticipated to move with GDP growth in the Yukon as the majority of their volume is sent north through the Yukon to various industrial activities.

On the other hand, M&N anticipates that other commodity groups, including outbound consumer goods, would depend on the overall economic health of the United States and surrounding area which serve as the primary economic partner for the Municipality. Inbound consumer goods, however, are expected to primarily trend with growth in the cruise industry. More than 90% of consumer spending within Skagway is accounted for by cruise visitors to the Municipality. The influence of cruise passengers determine the level of consumer goods that are sent to Skagway via AML during any given year.

Ore products through the Ore Dock are typically tied to a single mining activity, in the most recent case Minto Mine, and as a result fluctuates with the opening and closing of existing mines. The Minto Mine is anticipated to shut down in mid-2020 and is reflected in the model as shipping current volumes through the entire year of 2020. The constrained and unconstrained cases assumes that this volume stops coming through the Ore Dock and is not replaced with any other volume through the 20-year horizon. There is a third scenario in this analysis called the Project Case which examines the potential for another Yukon mine to begin shipments during the 20-year period of analysis.



Source: M&N

FIGURE 2.13: VOLUME PROJECTIONS, 2017 – 2037 (NO ORE CONCENTRATE POST 2020)

2.3.2.2. Revenues and Expenses Associated with Cargo Movement

The Municipality currently receives annual lease payments from WP&YR and Petro Marine Services and does not actively participate in the operations of the Port associated with cargo movement. Skagway currently receives annual payments from WP&YR and Petro Marine of \$127,200 and \$1,920, respectively. These payments persist regardless of the level of volume handled as stipulated in the lease agreement. Any projected revenues and expenses to the Municipality, given varying levels of cargo, could be taken into account if there was a future scenario in which the Municipality would alter the lease agreement with WP&YR and become more involved with the operations associated with cargo movement. The Skagway Waterfront model is able to incorporate a potential scenario in which additional revenues and expenses are a result of changes in the level of transported volume.

2.3.3. ALASKA MARINE HIGHWAY

Several assumptions are contained in the future conditions for AMHS traffic to Skagway. These include:

- AMHS passenger and vehicle traffic is assumed to increase by 0.5% annually based on a slightly higher rate of growth as compared to the 10-year average from the Alaska Marine Highway Statistics reports for 2006-2015
- 32% of disembarking passengers are non-residents and assumed tourists¹⁸
- 25% of the disembarking vehicles are from out-of-state and assumed tourists
- Assuming an equal level of spending of all potential consumers in Skagway, the average sales tax revenue generated per tourist is \$5.73 given current sales tax rates of 3% from October to March and 5% from April to September and the historic contributions from FY2007 to FY2016

¹⁸ Source: *The Economic Impacts of the Alaska Marine Highway System*, The McDowell Group Inc., January 2016

- Disembarking passengers and vehicles are assumed to spend one night in Skagway and contribute \$16.89 per tourist to bed tax revenues based on the average of FY2007 to FY2016

2.3.3.1. Passenger Traffic Forecast

Disembarking AMHS non-resident passengers are expected to grow from an estimated 7,449 in FY2016 to 8,272 in FY2037.

2.3.3.2. Vehicle Traffic Forecast

Disembarking AMHS non-resident vehicle traffic is expected to grow from an estimated 1,811 in FY2016 to 2,011 in FY2037.

2.3.3.3. Revenues

Revenues to the Municipality from tourists arriving through the AMHS come in two forms: sales and bed taxes. For purposes of this evaluation, we have assumed that AMHS travelers will contribute approximately \$5.73 per person in sales taxes and \$16.89 per overnight visit in bed taxes for the future evaluation which will both be unaffected by other changes at the Port. Table 2.7 shows the total contribution from AMHS tourists to the MOS revenues for selected years. In 2017, the tax contribution is estimated at \$210,000 which is expected to increase to about \$233,000 by the year 2037.

TABLE 2.7: POTENTIAL REVENUES TO SKAGWAY FROM AMHS TOURISTS

AMHS tourists	FY 2017	FY 2018	FY 2022	FY 2026	FY 2030	FY 2033	FY 2037
Disembarking passengers	7,487	7,524	7,676	7,830	7,988	8,109	8,272
Disembarking vehicles	1,820	1,829	1,866	1,904	1,942	1,972	2,011
Total AMHS tourists	9,307	9,353	9,542	9,734	9,930	10,080	10,283
Sales tax contribution	53,000	54,000	55,000	56,000	57,000	58,000	59,000
Bed tax contribution	157,000	158,000	161,000	164,000	168,000	170,000	174,000
Total tax contribution from AMHS tourists	\$ 210,000	\$ 212,000	\$ 216,000	\$ 220,000	\$ 225,000	\$ 228,000	\$ 233,000

Note: Total tax contribution has been rounded to the nearest 1,000th.

Source: M&N

2.3.3.4. Expenses

Expenses from AMHS tourist traffic is not quantified for this exercise as there is little for the Municipality to do in this regard other than the usual collection of sales and bed taxes from various vendors. It is expected that the level of traffic from AMHS tourists will not appreciably change the current expense categories for the Municipality.

2.3.4. SMALL BOAT HARBOR

The Skagway SBH is currently fully utilized. There are 19 vessel owners on the waitlist for slips between 30-40 feet. Several assumptions are included in the future conditions for the Skagway small boat harbor and include the following:

- Moorage rates are expected to increase on an annual basis by an additional \$0.10 per foot. (Example: moorage rates for 2016 at \$14.00 per foot increase to \$14.10 per foot in 2017.)
- All other revenue categories and all expenses for the SBH increase by the International Monetary Fund's (IMF) projections for US inflation.
- The SBH in its current configuration remains constant over the period of analysis from 2017 to 2037.

2.3.4.1. Usage – Potential for Expansion

The Municipality of Skagway 2020 Comprehensive Plan from February 2009 described plans for expanding the SBH to allow more 30- to 40-foot vessels and eliminate some of the 24-foot slips. According to the Harbormaster, there is no target date for expansion of the harbor at this time. There is also discussion of expanded upland storage in the Comprehensive Plan to accommodate the needs of vessel owners looking for winter storage, however, those expansion plans are in the discussion phase only with no timeline for construction.

2.3.4.2. Revenue/Expense Summary

The Skagway small boat harbor enterprise fund is projected to have total revenues of \$331,000 in FY2017 increasing to \$483,000 in FY2037. Total expenses including depreciation are projected to be \$1,029,000 in FY2017 and increase to \$1,555,000 by FY2037. When we exclude depreciation from the calculations, the small boat harbor has about \$50,000 in net operations revenues annually (See Table 2.8).

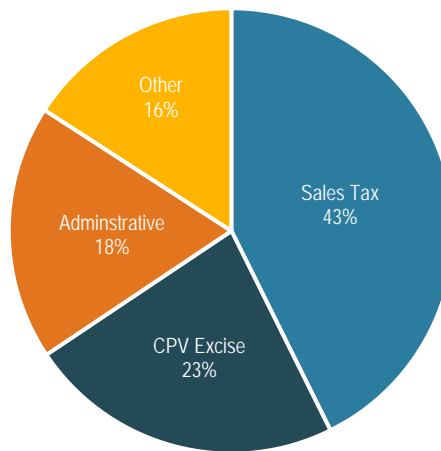
TABLE 2.8: NET REVENUES TO THE SKAGWAY SMALL BOAT HARBOR ENTERPRISE FUND

Skagway Small Boat Harbor	FY 2017	FY 2018	FY 2022	FY 2026	FY 2030	FY 2033	FY 2037
Projected revenues	331,000	338,000	368,000	395,000	425,000	449,000	483,000
Estimated expenses	1,029,000	1,053,000	1,156,000	1,251,000	1,354,000	1,437,000	1,555,000
Operating Gain (Loss)	(698,000)	(715,000)	(788,000)	(856,000)	(929,000)	(988,000)	(1,072,000)
Operations before depreciation	47,000	48,000	49,000	50,000	51,000	52,000	54,000

Note: Revenues and expenses for the small boat harbor have been rounded to the nearest 1,000th

Source: Municipality of Skagway, M&N

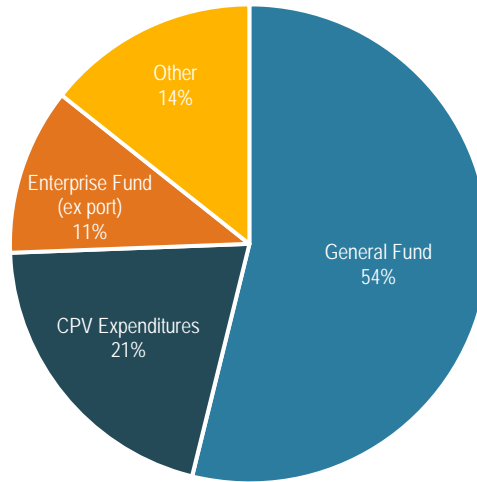
2.3.5. SUMMARY FUTURE CONDITIONS



Source: Municipality of Skagway, M&N

FIGURE 2.14: ALL REVENUES - CONSTRAINED CASE, FY2037

While total revenues increase, the constrained case will cause the share of revenues accounted for by cruise-passengers to decline through 20-year horizon of the forecast. The inability for the Port to accommodate larger vessels will limit the Municipality’s ability to maximize revenue generated from the sales and CPV Excise tax, however, these two sources of revenue will still account for the majority of revenue to the Municipality.



Source: Municipality of Skagway, M&N

FIGURE 2.15: ALL EXPENSES - CONSTRAINED CASE, FY2037

As previously mentioned, expenses are not expected to shift over the time-span of the Skagway Waterfront model except for movements with inflation. The changes in potential cruise passengers to Skagway will be a driver primarily for revenues, as the lease adjustment is not altered in the constrained case and the Municipality does not see changes in expenses other than inflation with additional cruise volume.

2.4. FUTURE CONDITIONS – CHANGED CRUISE SHIP CAPACITY - UNCONSTRAINED

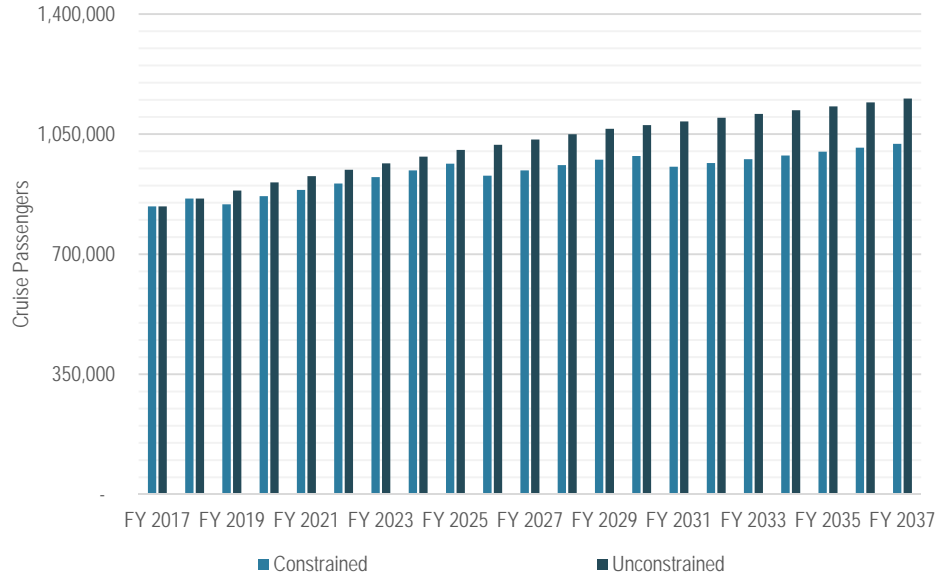
Increased cruise ship capacity means that Skagway Port improvements will allow the larger class cruise ships to dock, resulting in an increase in visitor traffic. The only industry subject to change under this condition is Cruise-related Tourism. All others are held constant through 2037 – no changes at the Port conditions.

The Unconstrained Case assumes infrastructure improvements are completed allowing full growth per the Cruise Line International Association (CLIA) Alaska forecast.

2.4.1. TOURISM – ASSUMPTIONS

2.4.1.1. Visitors

Under the Unconstrained Case, Skagway port improvements are assumed to be completed in order to allow the Port to handle larger cruise ships and increased visitor traffic. The upgrades will allow the Port to retain the additional 2,000 passengers a week beginning in 2019 that are expected on the larger cruise ships. These 2,000 additional passengers are expected to grow to approximately 6,000 a week by the end of the 20-year horizon, resulting in Skagway handling approximately 13% more cruise visitors annually by 2037.



Source: M&N

FIGURE 2.16: CRUISE PASSENGER FORECASTS FOR CONSTRAINED AND UNCONSTRAINED CASE, FY2017-FY2037

2.4.1.2. Revenues and Expenses

Revenues are expected to increase with the growth in cruise passengers as the revenues generated from the sales tax and CPV Excise tax are forecasted to increase along with the additional visitors. By FY2037, sales tax revenue is forecasted to be approximately 4.7% higher (\$9.2 million in the constrained case to almost \$9.6 million in the unconstrained case) while the CPV Excise tax revenue is anticipated to be about 13.07% higher (\$4.9 million in the constrained case to \$5.6 million in the unconstrained case). The CPV Excise tax will reflect a slightly higher percentage increase given the CPV revenue is based solely on cruise passengers and will grow accordingly, lagged one year to reflect the cruise passenger level from the previous year. Sales tax, on the other hand, incorporates all consumer spending including cruise passengers, independent visitors, and the population of Skagway.

TABLE 2.9: ALL REVENUES - UNCONSTRAINED CASE, FY2017-FY2037

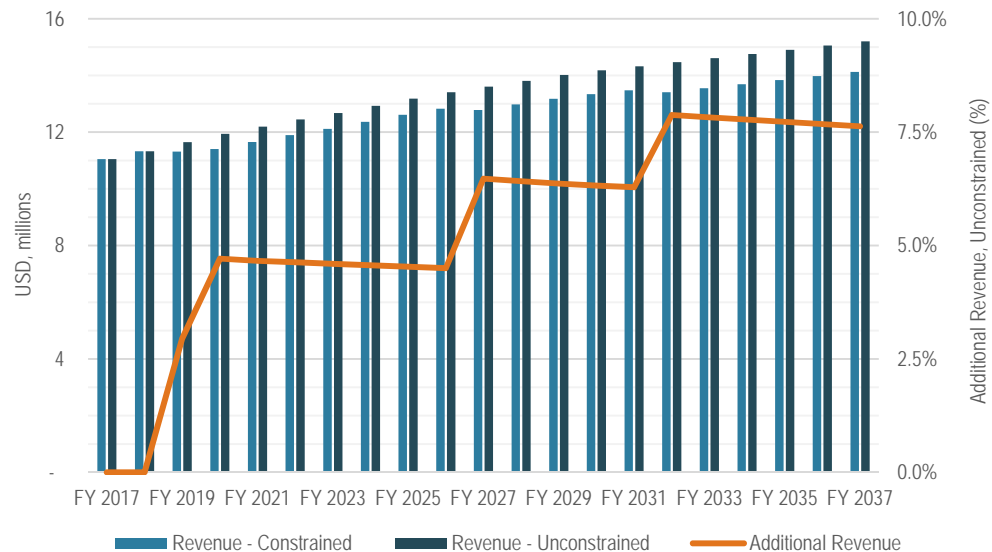
Revenue	FY 2017 (thousand \$)	Share of Total	FY 2037 (thousand \$)	Share of Total
Sales Tax	7,052	43.0%	9,614	42.5%
Bed Tax	161	1.0%	177	0.8%
CPV Excise Tax	3,996	24.4%	5,585	24.7%
Dock Water ¹	131	0.8%	150	0.7%
Operating Revenue – Small Boat Harbor ³	331	2.0%	483	2.1%
Non-Waterfront Property Tax ⁴	1,425	8.7%	1,732	7.7%
Waterfront Property Tax ⁴	415	2.5%	505	2.2%
Seasonal/RV Park Lease Income ²	86	0.5%	130	0.6%
Port/Waterfront & Uplands Lease Income	157	1.0%	237	1.0%
Operating Revenue – Administration ²	2,638	16.1%	3,989	17.6%
Total	16,392		22,602	

Notes to table:

1. Dock water revenues increase by one percentage point less than the increase in cruise ship passengers.
2. Existing seasonal/park leases and administration revenues increase by the projected inflation rate published by the International Monetary Fund (IMF).
3. Small Boat Harbor revenues increase annually based on \$0.10 increments to the moorage/dockage fee.
4. Property tax revenues increase in 5-year increments and property values are assumed to increase by 5% during those property re-assessments.

Source: Municipality of Skagway, M&N

Changes to the sales tax revenue with respect to the increase in number of cruise passengers will be slightly less than the growth in passengers given the presence of other groups of consumers that have varying growth rates. Overall, revenue under the unconstrained case is projected to be approximately 5% higher than the constrained case (\$20 million in the constrained case and \$20.85 million in the unconstrained case).



Source: Municipality of Skagway (MOS), M&N

FIGURE 2.17: SALES AND CPV TAX REVENUE IN CONSTRAINED AND UNCONSTRAINED CASES, FY2017-FY2037

Expenses to the Municipality are expected to increase with the inflation rates and are not a function of the gain in cruise passengers. As previously mentioned, the current lease agreement puts Port operations in the hands of WP&YR and multiple tenants who sublease the property. This implies that the Municipality does not incur any variable costs associated with Port usage as it receives standard lease payments on an annual basis. Therefore, expenses do not change in the unconstrained case and the net revenue (i.e. ALL revenues minus ALL expenses) to the Municipality is expected to increase by approximately 24.5% by FY2037 (\$5,479,660 as compared to the constrained case net revenue of approximately \$4,402,090).

2.4.2. SUMMARY FUTURE CONDITIONS – INCREASED CRUISE SHIP CAPACITY

The unconstrained case assumes that upgrades are made to Port facilities so that the Municipality is capable of handling the larger vessels that are expected to come into service. These upgrades will allow Skagway to realize the gain in revenue that will be a direct result of the increase in cruise passengers. The difference between the unconstrained and constrained cases is the benefit derived from an increase in expected visitors to Skagway.

2.5. FUTURE CONDITIONS – CHANGED COMMODITY MOVEMENTS – PROJECT CASE

For the Project Case, commodity movements are primarily a change in the ore concentrate industry. AML barge cargo and/or fuel over the dock at Skagway changes over time as previously discussed in the constrained case. The only industry to change under this future condition is Commodities as it pertains to ore concentrate. All others are held constant to the future – no changes at the Port conditions – in order to ascertain the effects of the bulk ore concentrate shipments through Skagway. Under the Project Case, start-up of Casino Mine is anticipated for 2022, handling approximately 74,000 metric tons annually. The WP&YR lease is assumed to continue, post-2023.

2.5.1. COMMODITIES – ASSUMPTIONS

2.5.1.1. Future Tonnage

For the project case, changes in volume handled by the Port will depend on the potential opening of Casino Mine operations in 2022 which is anticipated to bring approximately 74,000 metric tons annually of copper ore concentrate and/or gold oxide over the 20-year horizon of the financial model. In addition to the ore concentrate, and using estimates for construction and operational support project volume from Gartner Lee¹⁹, construction support is estimated at 0.00123 metric tons of support material per metric ton of expected ore concentrate volume, which is anticipated to begin in 2019 and continue the three years running up to the opening of the mine. Operational support is expected to continue during the lifetime of the mine and result in approximately 0.00353 metric tons of cargo per metric ton of volume being sent to the mine for support. The construction and operational support volume will most likely come through AML or Petro Marine services and average approximately 450 metric tons annually over the forecast.

¹⁹ These estimates were derived from the Skagway Port Development Plan, 2007

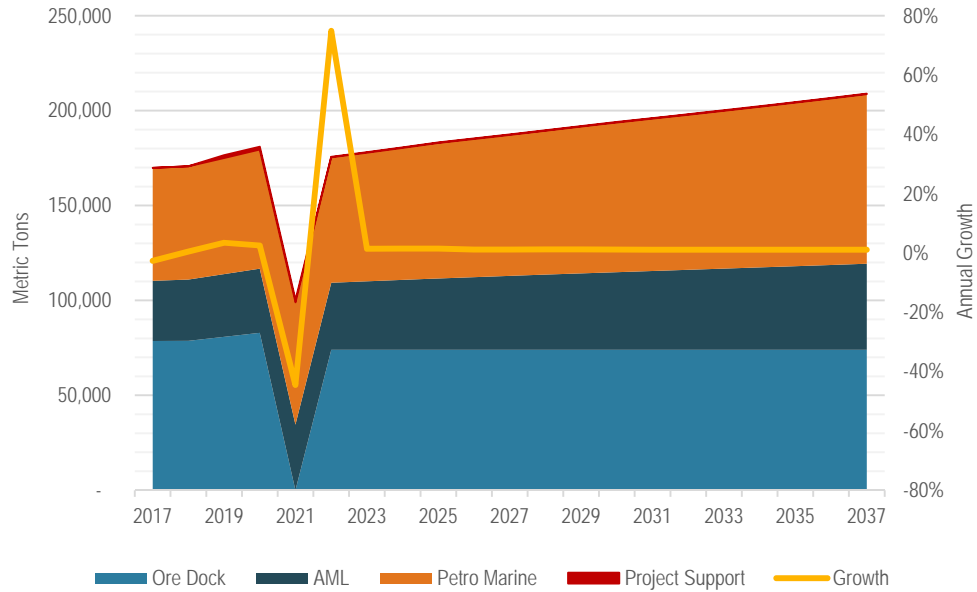


FIGURE 2.18: VOLUME PROJECTIONS – PROJECT CASE, 2017-2037

In the project case, revenues and expenses to the Municipality are not expected to change as the WP&YR lease is assumed to stay in place for the duration of the analysis timeframe. Future runs of the Skagway Waterfront model can evaluate changes in commodity movements under changed conditions for the lease agreements.

2.5.2. SUMMARY FUTURE CONDITIONS – CHANGED COMMODITY MOVEMENTS

The opening of the Casino Mine would bring approximately 74,000 metric tons of ore concentrate through Skagway annually through the time-horizon of the Skagway Waterfront model, a volume similar to current operations at the Minto Mine in the Yukon Territory. As previously mentioned, however, the future commodity projections in this scenario assume that the current WP&YR lease agreement continues post 2023 and the Municipality does not receive additional revenue for the increase in volume. The annual lease payment from WP&YR is the revenue received by Skagway regardless of any activity or inactivity associated with the Ore Dock.

2.6. COMPARISON OF FUTURE CONDITIONS

Comparing projections from FY2037 the unconstrained case as previously mentioned, would result in 7.35% more in waterfront-related revenue with a gain of 12.92% in cruise passengers to Skagway. The unconstrained case assumes that upgrades are made to the Port that allow accommodation of larger cruise vessels. Cruise passengers are a main driver of revenue to the Municipality and have a large influence over the direction of overall revenue that is generated from waterfront-related activity.

TABLE 2.10: WATERFRONT REVENUES & CRUISE PASSENGERS- CONSTRAINED & UNCONSTRAINED, FY2037

Indicator	Constrained Case	Unconstrained Case	Project Case	Change (%)
Waterfront Revenue (thousands, USD)	15,140	16,253	No change	7.35%
Cruise Passengers (thousands)	1,022	1,154		12.92%
Ore Commodity change to MOS revenues			74,000 MT	0.0 %

Source: M&N

Under the current lease agreement, commodities through Skagway do not influence the revenues or expenses of the Municipality and have no influence over the revenue generated. Cargo flows would have the potential to contribute to the revenues and/or expenses of the Municipality in a new lease agreement in which portions of the Port are turned back over to the Municipality for management. This scenario would be one in which the project case for commodity shipments is potentially reflected in the finances of Skagway, based on the potential fee of \$2.00 per ton for ore shipments, for example.

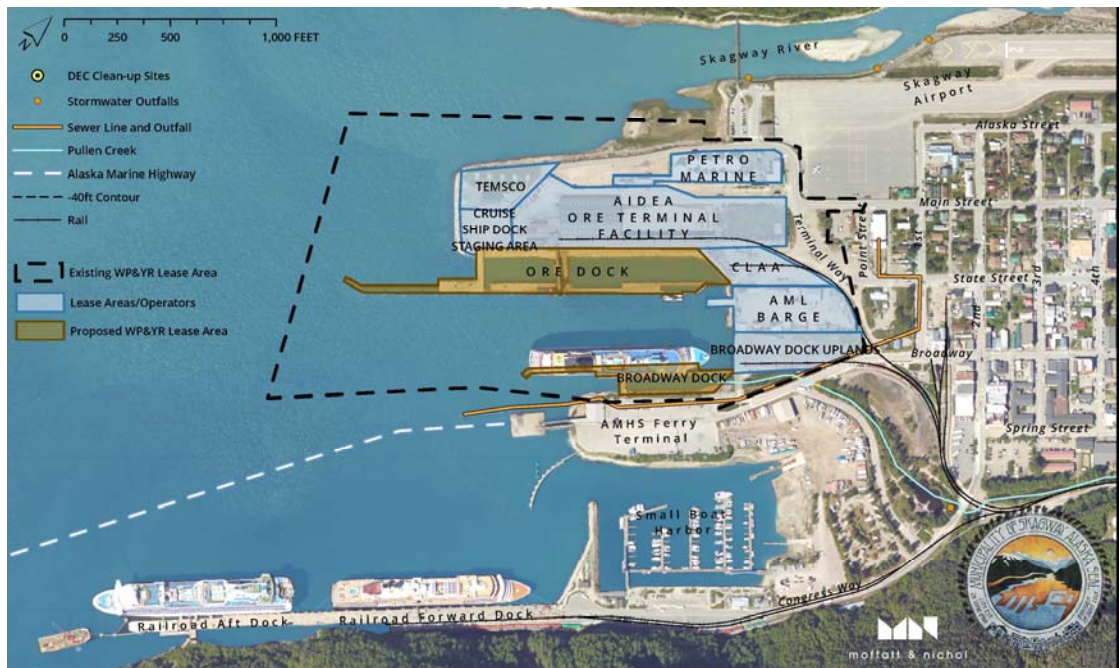
2.7. EVALUATION OF DRAFT WP&YR LEASE AGREEMENT

This section of the economics analysis examines changes to the Municipality’s revenues and expenses if the proposed June 3, 2015 WP&YR lease had been approved by voters. This analysis will allow decision-makers to understand more fully the implications from continuing down a path to assume more control of the waterfront.

There are many different iterations this path could take so for purposes of the analysis, we made the following assumptions:

- The land, tidelands, and submerged land values provided by Julie Dineen Company on May 15, 2017 are assumed representative of the true land and market values
- Only the existing subleases are considered in this evaluation – other opportunities will undoubtedly be presented once the Municipality assumes control of the waterfront
- The existing lease agreement terminates in March 2023

For purposes of this analysis, the proposed lease area for the 2015 lease with WP&YR is shown below in Figure 2.19 highlighted in yellow, total 7.69 acres (334,862 square feet) for the Ore Dock parcel and the Broadway Dock parcel combined.



Source: NOAA, OpenStreetMap, MOS documents, M&N

FIGURE 2.19: PROPOSED WP&YR LEASE AREA - 2015

Table 2.10 shows the square footage, the value range, and the status of the sublease properties as described by the Julie Dineen Company in the Draft Market Value and Market Rent Appraisal Report dated May 15, 2017. Tideland properties have a value range of \$3.00 to \$4.00 per square foot while uplands have a value range of \$7.00 to \$14.00 depending on the property. The draft lease with WP&YR was for 334,862 square feet of tidelands. The additional tidelands outlined in the Draft



Market Value Report are listed as “other” and would be available for lease should the Municipality assume these responsibilities.

TABLE 2.11: SUBLEASE AREAS, VALUES, AND STATUS

Draft lease and subleases	Square feet	Sq Ft Value Range	Sq Ft Value Range	Low Value	High Value	Status
WP&YR tidelands	334,862	\$3.00	\$4.00	\$1,004,586	\$1,339,448	March 2023 term
Other Tidelands	1,001,138	\$3.00	\$4.00	\$3,003,414	\$4,004,552	
TEMSCO	69,696	\$8.00	\$9.00	\$557,568	\$627,264	Holdover
Petro Marine	86,250	\$7.00	\$8.00	\$603,750	\$690,000	March 2023 term
AIDEA	307,969	\$7.00	\$9.00	\$2,155,783	\$2,771,721	March 2023 term
Ore Dock staging area	59,500	\$11.00	\$13.00	\$654,500	\$773,500	
Land N of Petro and W of AIDEA	34,500	\$7.00	\$8.00	\$241,500	\$276,000	
CLAA	81,400	\$11.00	\$12.00	\$895,400	\$976,800	Holdover
Broadway Dock staging area	110,380	\$13.00	\$14.00	\$1,434,940	\$1,545,320	
AML	112,500	\$12.00	\$13.00	\$1,350,000	\$1,462,500	Holdover
NOAA						thru Sept 2017

Source: Julie Dineen Company Draft Market Value and Market Rent Report prepared for M&N, May 15, 2017. The range of values is based on similarly situated properties in Sitka, Juneau, Ketchikan, Anchorage, and Seward.

According to the Market Value Report, tidelands typically lease for 6-7% of the value of the land and uplands typically lease for 8-9% of the value of the property. With that general guidance in mind, the leases for each of the areas covered by the WP&YR draft lease would be as shown in Table 2.12.

TABLE 2.12: SUBLEASE LOW AND HIGH VALUES AND MOS POTENTIAL FOR REVENUES

Leases	Estimated payments to WP&YR	Revised lease (low)	Revised lease (high)	Potential for MOS revenue
WP&YR tidelands (June 2015 draft lease) ^{1,2}		\$250,000	\$400,000	start 2023
Other tidelands ²		\$180,205	\$280,319	start 2023
TEMSCO	\$38,000	\$44,605	\$56,454	start 2023
Petro Marine ⁴	\$8,751	\$48,300	\$54,338	start 2023
AIDEA	\$14,169	\$172,463	\$249,455	AIDEA will probably drop lease unless new customer identified
Ore Dock staging area		\$52,360	\$69,615	Becomes public area ³
Land N of Petro and W of AIDEA		\$19,320	\$24,840	Becomes public area ³
CLAA		\$71,632	\$87,912	start 2023
Broadway Dock staging area		\$114,795	\$139,079	Becomes public area ³
AML	\$88,728	\$108,000	\$131,625	start 2023
NOAA	\$1,300	\$1,300	\$1,300	start 2023

Notes:

¹ The revised lease payments shown here are from the June 2015 draft lease. If we were to use the methodology of 6-7% of the land value, the low lease amount would be \$60,275 and the high lease, \$93,761.

² Tideland leases are calculated at 6-7% of the tideland and submerged land values. Upland leased ranges are calculated at 8-9% of the land value.

³ The subleases that become public areas would be areas in which the Municipality could entertain additional subleases. This would be in addition to the AIDEA property if and when that becomes available.

⁴ Petro Marine payments to WP&YR are for the ground lease only. Fuel flows through the Port are under a separate lease to the Municipality.

Source: Julie Dineen Company, Municipality of Skagway, with M&N calculations.

There is potential for the Municipality to gain revenues from the WP&YR tideland lease through leases to other tideland/submerged land users, TEMSCO, Petro Marine, Cruise Line Agencies of Alaska (CLAA), AML, and National Oceanic and Atmospheric Administration (NOAA) for their weather station property. The staging areas are currently under Pacific and Arctic Railway and Navigation Company (PARN) control and they are paying real property taxes.

We assume for purposes of this analysis that the AIDEA lease will not be renewed unless a new customer is identified. We also assume that the staging area properties will become public areas managed by the Municipality. Under the Project Case scenario, there is potential for moving 74,000 MT of ore once the Casino Mine becomes operational. The draft sub-lease for AIDEA indicated a \$2.00 per ton fee to the Municipality. If the draft WP&YR lease and the draft sub-lease to AIDEA were to go into effect, the Municipality would realize about \$148,000 annually in additional revenues.

There will also be some additional staffing requirements for the Municipality when the waterfront changes hands. Table 2.12 shows our assumptions for staffing expense:

TABLE 2.13: MOS EXPECTED ANNUAL EXPENSES FROM MANAGEMENT OF WATERFRONT

Staff requirements		Annual salary	Expense to MOS
Manager FTE	0.5	\$75,000	\$37,500
Administrative FTE	0.25	\$35,000	\$8,750
Overhead and benefits multiplier	1.5		\$69,375
Attorney contract			\$100,000
Total staff requirements			\$215,625

Note: Confirmation from the Municipal financial department that the 1.5 multiplier for overhead is sufficient. The staffing levels here are assumed only for management of the existing contracts. An expanded interest in waterfront leasing could require additional personnel. Source: M&N with input from Mayor Mark Schaefer and Municipality Finance Department.

TABLE 2.14: SUMMARY OF NET REVENUES FROM MANAGEMENT OF WATERFRONT

Summary	Revised lease (low)	Revised lease (high)	Potential for MOS revenue
Revenues to MOS ¹	\$523,837	\$731,628	start 2023
Less real property taxes ²	\$3,885	\$3,885	start 2023
Less staff requirements ³	\$215,625	\$215,625	start 2023
Net revenues	\$304,328	\$512,118	

Notes:

¹ Revenues to MOS include the 2015 draft lease agreement for WP&YR along with the sublease revenues with revised property values for TEMSCO, Petro Marine, CLAA, AML, and NOAA. The AIDEA lease is assumed not to be carried forward in 2023 unless a new customer is identified.

² Real property tax losses are an estimate of the staging area leases currently paid by PARN under the WP&YR existing lease agreement.

³ Staff requirements assume minimal staff to take on the waterfront responsibilities as they currently exist. Expansion of the leases at the waterfront would require additional personnel and attorney contract expenses.

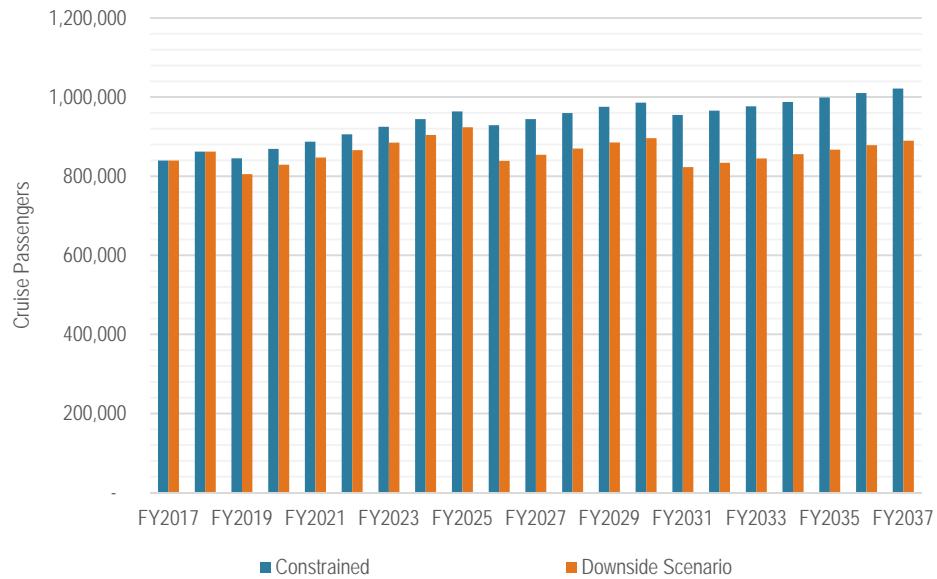
Source: M&N

In summary, given the assumptions noted here, the Municipality could net an additional \$304,000 to \$512,000 annually by assuming control of the waterfront leases. Additional revenue potential exists in the event a new mine operator willing to move product through Skagway is identified.

2.8. RISK AND UNCERTAINTY ASSESSMENT

2.8.1. DOWNSIDE RISK

Given a constrained scenario in which updates are not made to the waterfront and the facilities are not able to handle larger vessels, there exists the possibility that losses will be greater than expected if either the industry pushes more heavily towards larger vessels or industry growth is substantially below expectations. This downside scenario reflects a case in which lost passengers are double that under the constrained case (the constrained case assumed a loss of 40,000 passengers in the initial year and escalating thereafter), resulting in the potential loss of 80,000 cruise passengers in the initial year and rising to 264,000 cruise passengers per year by FY2037.



Source: M&N

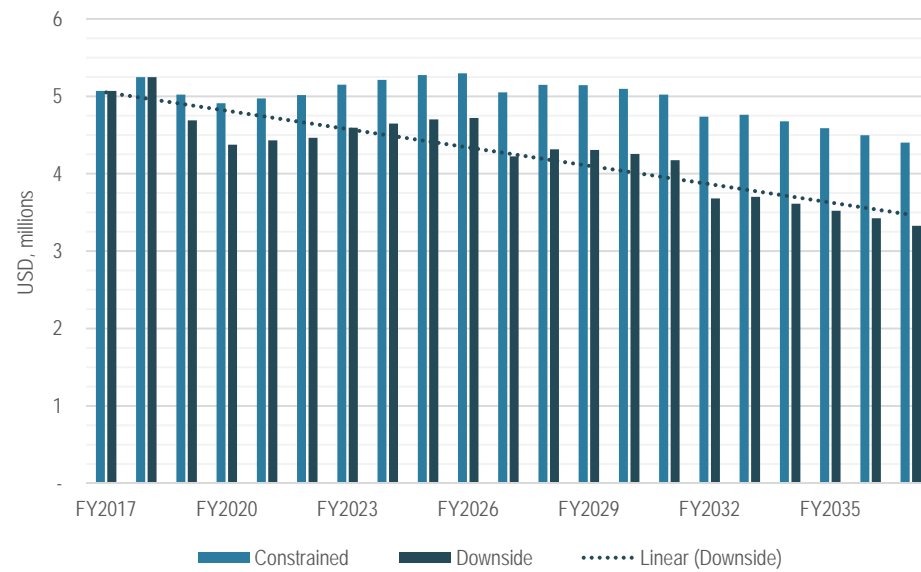
FIGURE 2.20: CRUISE PASSENGERS IN DOWNSIDE RISK – FY2017-FY2037

Again assuming no change to the current WP&YR lease structure, revenue would decline with expenses left unchanged. Compared to the constrained case, the downside scenario would result in a loss in total annual revenue of -5.0% by FY2037. Net revenue, however, would decline by an even greater rate of approximately -24.5% by FY2037 (an amount of about \$1.08 million). Waterfront-related revenues would go from representing about 70% of total Municipality revenue in FY2037 to approximately 68%, while the contribution of the sales tax and CPV Excise tax to the Municipality would decline in the downside risk scenario. In this scenario, industry trends will be a primary factor in determining the likelihood of such an outcome.

TABLE 2.15: ALL REVENUES - DOWNSIDE RISK VS. CONSTRAINED CASE – FY2037

Revenue	Constrained (thousand \$)	Share of Total	Downside Risk (thousand \$)	Share of Total
Sales Tax	9,183	42.7%	8,752	42.8%
Bed Tax	177	0.8%	177	0.9%
CPV Excise Tax	4,940	22.9%	4,295	21.0%
Dock Water	150	0.7%	150	0.7%
Operating Revenue – Small Boat Harbor	483	2.2%	483	2.4%
Non-Waterfront Property Tax	1,732	8.0%	1,732	8.5%
Waterfront Property Tax	505	2.3%	505	2.5%
Seasonal/RV Park Lease Income	130	0.6%	130	0.6%
Port/Waterfront & Uplands Lease Income	237	1.1%	237	1.2%
Operating Revenue - Administration	3,989	18.5%	3,989	19.5%
Total	21,526		20,450	

Source: Municipality of Skagway, M&N



Source: Municipality of Skagway, M&N

FIGURE 2.21: NET REVENUE – DOWNSIDE RISK VS. CONSTRAINED CASE – FY2017-FY2037

2.8.2. UPSIDE RISK

In a situation where the waterfront is updated to accommodate larger cruise vessels, there is a potential upside scenario in which growth in the cruise line industry is higher than expected and results in Skagway seeing approximately 1.4 million cruise passengers by FY2037. This scenario is an extension of the unconstrained case and assumes a growth rate in the cruise industry of 3.0% in the initial years of the forecast, a slight increase over the Cruise Line International Association (CLIA) anticipated rate of 2.7%. It is important to note again, however, that the upside scenario is contingent on Skagway having the capacity to handle the larger cruise vessels expected to come into service.

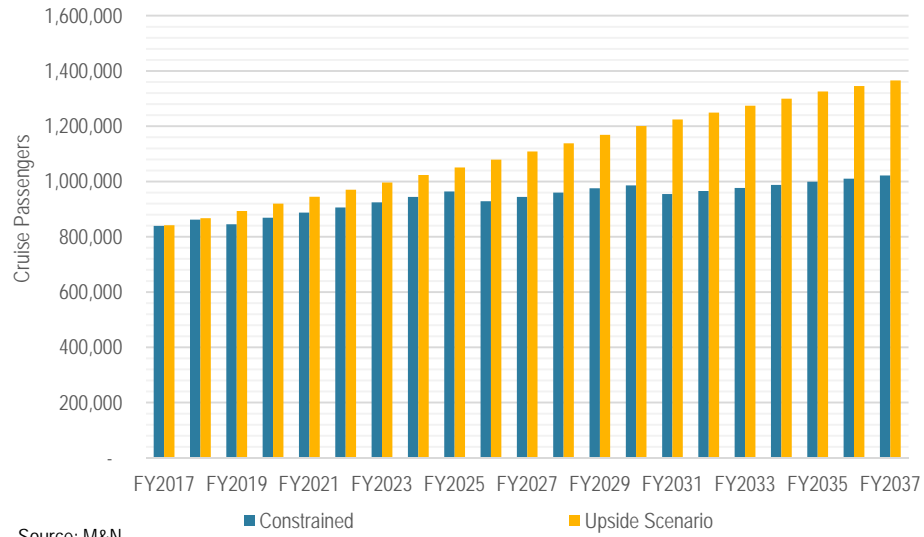


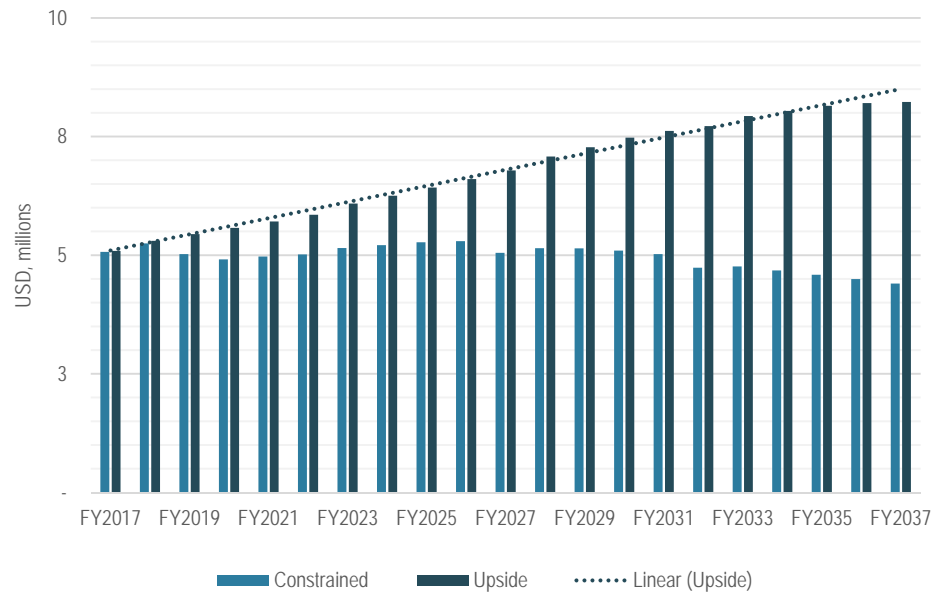
FIGURE 2.22: CRUISE PASSENGERS IN UPSIDE RISK – FY2017-FY2037

If there were no changes to the current WP&YR lease, expenses would remain as currently forecasted while anticipated revenues to the Municipality would increase. Compared to the constrained case, the upside scenario would result in an increase in total revenue of 17.7% by FY2037. Net revenue would expand by even a larger percentage of over 86% through the end of the 20-year horizon, an additional net gain to the Municipality of approximately \$38 million. Of total revenue, waterfront-related contributions would go from accounting for about 70% of total revenue in FY2037 to over 75% of total revenue. These gains in the contributions of waterfront-related activities to total revenues would come from both the sales tax and CPV Excise tax. Expansion of the cruise industry beyond current expectations would be the narrative pushing this potential scenario.

TABLE 2.16: ALL REVENUES - UPSIDE RISK VS. CONSTRAINED CASE – FY2037

Revenue	Constrained (thousand \$)	Share of Total	Upside Risk (thousand \$)	Share of Total
Sales Tax	9,183	42.7%	11,369	44.8%
Bed Tax	177	0.8%	177	0.7%
CPV Excise Tax	4,940	22.9%	6,579	26.0%
Dock Water	150	0.7%	150	0.6%
Operating Revenue – Small Boat Harbor	483	2.2%	483	1.9%
Non-Waterfront Property Tax	1,732	8.0%	1,732	6.8%
Waterfront Property Tax	505	2.3%	505	2.0%
Seasonal/RV Park Lease Income	130	0.6%	130	0.5%
Port/Waterfront & Uplands Lease Income	237	1.1%	237	0.9%
Operating Revenue - Administration	3,989	18.5%	3,989	15.7%
Total	21,526		25,351	

Source: Municipality of Skagway, M&N



Source: Municipality of Skagway, M&N

FIGURE 2.23: NET REVENUE – UPSIDE RISK VS. CONSTRAINED CASE – FY2017-FY2037

3. SUMMARY AND CONCLUSIONS

Existing sales, bed, and CPV Excise taxes comprise 68% of the total revenues to the Municipality. An increase or decrease in cruise and independent travellers to Skagway can affect these revenues. This evaluation examines three case scenarios and the resultant changes to Municipal finances as a result.

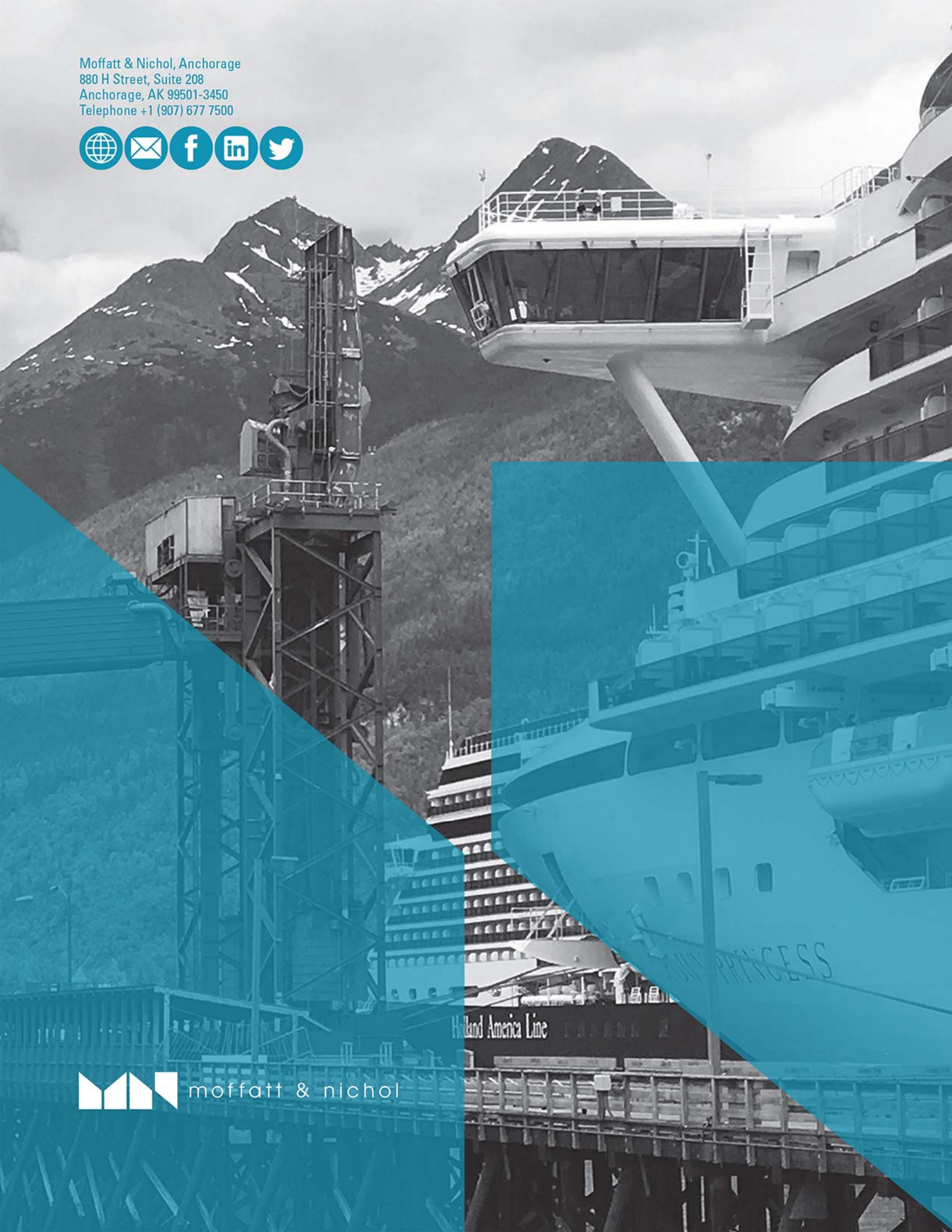
1. The constrained case scenario results in an annual potential loss of 40,000 cruise passengers and increases to losses of 132,000 cruise passengers by FY2037. Potential lost revenues to the Municipality are \$14.8 million over the 20-year forecast.
2. The unconstrained case scenario captures all of those cruise passengers assumed lost in the constrained case, along with all related revenues.
3. Ore concentrate exports from Skagway are expected to cease in FY2019 without the initiation of a new Canadian mine operation. However, if that were to change, perhaps with the proposed Casino Mine coming online, potential concentrate exports out of Skagway could be in the range of 74,000 MT annually. Under the current lease agreement, this would not affect the revenues to the Municipality.

This evaluation also examines the potential financial effects of the draft WP&YR lease (from June 2015). Had that draft lease gone into effect, the Municipality could have increased net revenues from \$304,000 to \$512,000 annually. If the proposed Casino Mine were to come online, based on the terms and conditions of the June 2015 draft lease agreement with WP&YR, the Municipality could gain an additional \$148,000 in revenues from a proposed \$2.00 per ton fee.

A risk assessment of the underlying assumptions for this modelling effort reveals that doubling the loss of cruise passengers results in additional losses of \$14.8 million (in addition to the \$14.8 million in the constrained case) for a total loss over the 20-year timeframe of \$29.6 million. Alternatively, increasing the cruise ship passenger forecast slightly from the CLIA predictions results in additional revenues to the Municipality of \$23.7 million over the 20-year forecast.

Cruise industry trends, stable economic conditions for the US and Canada, and Alaska's attractiveness as a tourist destination will continue to drive Skagway's finances. The modelling effort described here can be used for additional scenarios as the Municipality of Skagway continues to evaluate future lease agreements and changes to the industries driving the Skagway economy.

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