May 20, 2019

Casco Bay Island Transit District
56 Commercial Street
Portland, Maine 04101

Background and Scope of Review

The Casco Bay Island Transit District(CBL) Board of Directors has asked staff to first analyze the financial implications of the three vessel options by employing conservative assumptions for ridership, revenue and costs and to then apply varying economic scenarios to the base forecasts.

The scope of this peer review was to determine the reasonableness of the financial assumptions, source data and analysis approach used to respond to the Board's request and to provide guidance to CBL in the finalization of their analysis and reporting of findings on this analysis.

While the assumptions underlying the analysis were reviewed for reasonableness, independent research into economic conditions or trends was not conducted. Additionally, an in-depth audit of the spreadsheets was outside the scope of this review.

The materials provided and reviewed include:

- An excel workbook using historical CBL data to develop inputs for the net present value analysis,
- Comparison of vessel capacity prepared by EBDG
- Analysis narrative prepared by CBL staff
- Ridership demand estimates prepared by the Steer Group

Findings

Net Present Value Analysis

The analysis employed net present value(NPV) calculations to measure feasibility and to compare the three vessel options. Using projected revenues and costs over a period of time, NPV is a common tool for screening investments and ranking comparable investment opportunities. In CBL's case, the three vessel investment opportunities are similar but not fully comparable in that vehicle and passenger carrying capacities and flexibility to meet operating efficiencies varies some. However, for this analysis, NPV offers a useful and easy to understand comparison which can be supplemented with other considerations regarding fit of the three vessel options into CBL operations.

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A thirty-year planning period was selected to correspond to useful life estimates for the vessels. While this timeframe is appropriate for NPV analysis, as CBL staff has noted, the confidence level of financial forecasts in later years is lower.

Assumptions

The assumptions used for this analysis are quite conservative in accordance with Board direction. While conservative assumptions are useful in evaluating the organization's ability to withstand financial downturns, a ranking of investment opportunities should not rest entirely on this analysis and should also take into account other factors such as the rider experience, opportunities to achieve other operational efficiencies and the ability to effectively and efficiently handle less conservative and more current growth rates. This is not to suggest that less conservative assumptions should have been adopted for this exercise, however CBL may want to also consider the implications of less conservative assumptions.

Typically, a business or service remains financially viable through a combination of cost containment, price increases and increased demand. While greater operating efficiencies may be possible, inflationary cost increase are inevitable, except in severe economic downturns, making revenue increases necessary. Increased revenue can be realized through greater sales volume, unit price increase or a combination of both. The relationship between price and demand is important; higher prices typically dampens demand and the converse reduced or flat prices leads to increased demand. For this analysis CBL has decided to both keep prices at current levels over the next thirty years and to project ridership or demand increases at very low levels while escalating costs at inflationary rates. The effect is to narrow contribution margins below what they have been in the recent past. This approach leads to a very conservative financial forecast.

Costs

CBL built their cost forecasts using 2018 actual costs which were then adjusted to reflect relevant variable costs associated with the three vessel options. Fundamentally this is a sound approach to cost forecasting.

The key vessel related operating costs for the three options are very similar, reflecting the commonality of major vessel components and the fuel efficiency of longer vessels of the same beam. Although independent research on new vessel operating costs was outside the scope of this review, the similarity in costs is not unexpected. Variations were anticipated and observed in maintenance costs where the larger hull and superstructure leads to higher maintenance costs and in labor where higher passenger capacity requires some additional manning during peak ridership times. The higher cost profile for the largest vessel was offset some by the avoidance of extended crew hours or barge services for additional trips to serve high demand travel periods .

Revenue

As mentioned above, CBL adopted a conservative approach to ridership forecasting for this analysis. Regression analysis was used to calculated an average annual growth rate using actual ridership experience over the 15-year period from 2004 – 2018. This timeframe included a major, nationwide economic recessionary period and corresponding ridership decreases. The resulting average annual passenger ridership growth rate was lower than actual growth rates over the last 5 years and below the low-end of the range of growth rates predicted by the

Steer Group using an econometric ridership forecasting model. Additionally, the forecasts do not reflect potential ridership increases possible through increases in vehicle and passenger carrying capacity for vessel options two and three. This average annual growth rate was applied over the 30-year period.

Conclusion

CBL staff employed logical and consistent analytical practices to develop financially conservative pro forma financial statements and NPV analysis for the three vessel options and to evaluate the implications of further potential adverse economic conditions. While not necessary to meet the objective of the Board's request, a more balanced financial outlook might be developed by also applying less conservative ridership and economic assumptions and expanding the analysis to address rider consideration such as wait times and crowding.

Carla Leigh Sawyer
Progressions

Executive Summary

Objective: The objective of this analysis is to understand the various cost profiles of three different preliminary vessel designs, test the viability of cost characteristics for the vessel designs and project their predicted impact on the financial sustainability of the Casco Bay Island Transit District, given changing ridership and revenue levels.

Data Analysis Approach: CBITD staff analyzed historical ridership, vehicle and freight data, identifying trends and key metrics that would allow us to utilize historical data to create forward looking projections. In order to achieve this, data from 2004 to 2018 (15 years) was reviewed. This range was selected intentionally to ensure that the "great recession" years of 2008 and 2009 were included in the actuals, making the projections very conservative.

Through this historical data analysis, staff confirmed the seasonality of CBITD ridership has been intensifying, with summers seeing higher ridership than ever and winter seeing lower ridership than ever. In the case of vehicles, capacity trips have increasingly become a year-round event and winter vehicle transportation has grown at a very high rate.

Expenses (costs) for the preliminary vessel designs were then projected over the useful life of a new vessel (30 years) using FY2018 actuals as a base and extrapolating changes to relevant cost categories. The categories that were considered variable, based on vessel configuration, were Personnel Expense, Vessel Expense, Operations Expense and Indirect Cost.

For each of the three preliminary vessel designs (12 car/399 passenger, 15 car/399 passenger and 15 car/599 passenger), a base projection was formulated for both revenue and cost and formatted similar to CBITD monthly financials. Finally, these estimates were "tested" using seven various scenarios constituting shocks to the demand for ridership and vehicles, as well as anticipated changes in costs such as labor and fuel.

All calculations and the data analysis were reviewed by an independent third-party.

Conclusions: Analysis of historical data confirms the previously calculated growth trend for ridership demand in the summer months and highlights the need to accommodate additional passengers.

Historical data also clearly indicates an increasing reliance on vehicle service year-round and emphasizes the need for added car deck capacity soon, if not already.

Only slight variations were found in the cost profiles for the three preliminary vessel designs.

Specifically, CBITD can expect the cost profiles of these three vessels to be virtually identical in fuel consumption and insurance, with only slight differences in crewing when additional capacity is desired. As in recent years, any differences in drydock and construction costs should be mitigated by FTA PM Grant reimbursement.

The real cost driver for CBITD and vessels, current or proposed, is the schedule that the vessel must adhere to.

Even when using extremely conservative forward-looking revenue estimates, and after accounting for projected costs, each of the three preliminary vessel designs would have a positive financial impact for

CBITD. The difference between the three over the 30-year projection period is within a reasonable margin of error.

Finally, projections were subjected to seven “shock tests”. The three preliminary vessel designs were impacted equally, with a slight advantage in one scenario for a 15-car vehicle deck further reinforcing that the positive financial projections were resilient.

CBITD NEW PEAKS ISLAND VESSEL 30 YEAR FINANCIAL PRO FORMA

Introduction:

At the April 2019 Board of Directors meeting, a vote was approved to delay any decision on new vessel capacity guidance for a period of 60 days. During this period, 1) there would be sufficient time for BOD to review KPFF report, 2) CBL staff could research and provide guidance on how a vehicle reservation system could impact this decision, 3) CBL staff could also research and create a vessel size financial impact analysis with variable inputs and results to test the upcoming decision, and 4) CBL staff would reach out to the City of Portland to determine if it would have involvement in addressing congestion concerns on the Island.

Objective:

The objective of this analysis is to understand the various cost profiles of three different vessel designs. The document provided by Dr. Chuck Radis was utilized heavily to both understand the request and to build the various scenarios used to explore how these three cost profiles might perform under different scenarios. Both BOD and public urged CBITD to use conservative scenarios in the analysis and I believe that we have done exactly that. In my view, the reasoning for such conservative growth scenarios was specifically to test the viability of a new vessel's cost profile and determine if it is sustainable given changing ridership and revenue levels.

Analysis:

The approach for this analysis was two-pronged, Revenue and Expense. For Revenue, CBITD staff analyzed historical ridership and vehicle data, looking for trends and key metrics that would allow us to understand the historical numbers and create forward looking projections. In order to achieve this, data from 2004 to 2018 was reviewed, a full 15 years. This range was selected intentionally, as the "great recession" years of 2008 and 2009 were included in the actuals and CBITD staff considered this to be a more conservative outlook than examining data from shorter time frames. The "great recession" was comprised of a recessionary period lasting from Q3-2008 until Q2-2009, a full 12 months, with a trough to peak GDP economic decline of 5.1%. As a result, the sample period of 15 years included economic boom and bust cycles. Most notably, the "Great Recession" occurred during the data sample, including the 2008-2009 recession ridership numbers in this sample makes the base case ridership projections quite conservative, certainly more conservative than recent experience would predict. Additionally, ridership and accordingly, revenue, is held constant for all three vessels in keeping with this conservative approach.

Fiscal year 2018 revenue was analyzed to determine average revenue realization per unit, which was applied to forward looking projections in order to derive revenue. To underscore the fact that revenue projections are extremely conservative, 2018 ticket and vehicle prices were maintained for the life of the analysis, without increases. While this is, at first glance, unreasonable for a 30-year period, CBITD staff wanted to examine the financial viability of these vessels under the strictest of scrutiny, with depressed revenue figures.

It is important to note that all passenger, vehicle and revenue realized per unit is calculated as "unlinked" or one-way. So, in order to understand any one metric, simple math must be applied. Passengers and vehicles must be halved to for round trip passengers and vehicles. Realized revenue must be doubled for round trip revenue per passenger/vehicle ticket.

Expenses were analyzed using FY2018 actuals as a base and extrapolating changes to relevant cost categories. The categories that were considered to be variable based on vessel configuration were as follows: Personnel Expenses, including crew wages, crowd control wages, and FICA; Vessel Expense, including general repairs, drydock, diving, oil change, fuel and hull insurance; Operations Expense, including barge subcontracting. In virtually all cases, costs were modeled to increase on an annual basis over the life of the projections.

For each of the three vessels, 12 car/399 passenger, 15 car/399 passenger and 15 car/599 passenger, a base projection was formulated for both revenue and cost and formatted similar to CBITD monthly financials. In all cases, a final contribution was calculated, year by year.

In order to compare results (contribution) across vessels and scenarios, the net present value of each was calculated. Net present value (NPV) is one of the gold standards for financial decision making and is "a commonly used tool for evaluating capital investments. In mathematical terms, NPV is the difference between the present value of cash inflows and outflows over a period of time. In this analysis a positive NPV indicates that the capital investment and the operating costs incurred through use of a capital purchases, such as a new ferry, is less than the revenue stream generated by deployment of the capital asset." [1]

NPV can also be used to rank investments if the investments being evaluated are of equal utility or functionality. When the functional performance is not equal, NPV is still useful to determine if the investment will make a positive return. NPV may not be sufficient as a stand-alone tool for evaluating the merits of these three different vessel profiles but it does provide useful insight into the financial viability of the options.

Forward looking trends were established in this analysis and it must be understood that the task was to look at ridership, vehicles and freight over the useful life of a new vessel, which is 30 years, a long forecast period. As the data analysis forecast moves out, from year to year, it needs to be understood that the confidence interval for each successive year is a bit lower than the one preceding it. These projections are made in good faith, with the best available data, in the time allotted to make them.

Later in the work paper, scenario testing for various economic or policy issues will be explored and detailed using similar analysis.

[1] Investopedia, https://www.investopedia.com/terms/n/npv.asp

Raw Data

See a sample of passenger/vehicle data below.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Trip_Num	Passengers_To	Passengers_From	Island_Num	Boat_Name	Vehicles_To	Vehicles_From	Trip_Date	Trip_Day	Extra_Service	Trip_Cancelled	month
2	→											
3	0630	2	31	5	AUCOCISCO			10/1/2017	SUN			Oct-17
4	0630	0	2	6	AUCOCISCO			10/1/2017	SUN			Oct-17
5	0630	1	9	7	AUCOCISCO			10/1/2017	SUN			Oct-17
6	0630	7	11	3	AUCOCISCO			10/1/2017	SUN			Oct-17
7	0630	0	8	2	AUCOCISCO			10/1/2017	SUN			Oct-17
8	0645	8	34	1	MACHIGONNE	0	3	10/1/2017	SUN			Oct-17
9	0745	55	96	1	MACHIGONNE	0	10	10/1/2017	SUN			Oct-17
10	0915	100	96	1	MACHIGONNE	1	6	10/1/2017	SUN			Oct-17
11	1000	8	11	7	MAQUOIT			10/1/2017	SUN			Oct-17
12	1000	10	9	6	MAQUOIT			10/1/2017	SUN			Oct-17
13	1000	13	0	5	MAQUOIT			10/1/2017	SUN			Oct-17
14	1000	4	0	2	MAQUOIT			10/1/2017	SUN			Oct-17
15	1000	12	0	3	MAQUOIT			10/1/2017	SUN			Oct-17
16	1000	38	38	11	MAQUOIT			10/1/2017	SUN			Oct-17
17	1000	2	0	4	MAQUOIT			10/1/2017	SUN			Oct-17
18	1000	27	27	10	AUCOCISCO			10/1/2017	SUN			Oct-17
19	1015	106	111	1	MACHIGONNE	1	11	10/1/2017	SUN			Oct-17
20	1100	3	72	4	WABANAKI			10/1/2017	SUN			Oct-17
21	1100	2	8	2	WABANAKI			10/1/2017	SUN			Oct-17
22	1100	1	17	3	WABANAKI			10/1/2017	SUN			Oct-17
23	1100	19	94	5	WABANAKI			10/1/2017	SUN			Oct-17
24	1100	52	52	13	WABANAKI			10/1/2017	SUN			Oct-17
25	1115	199		1	MACHIGONNE	7	4	10/1/2017	SUN			Oct-17
26	1215	191	121	1	MACHIGONNE	3	9	10/1/2017	SUN			Oct-17
27	1415	199	214	1	MACHIGONNE	4	7	10/1/2017	SUN			Oct-17
28	1445	11	4	7	MAQUOIT			10/1/2017	SUN			Oct-17
29	1445	30	30	11	MAQUOIT			10/1/2017	SUN			Oct-17
30	1445	3	0	6	MAQUOIT			10/1/2017	SUN			Oct-17
31	1445	5	1	3	MAQUOIT			10/1/2017	SUN			Oct-17
32	1445	7	0	2	MAQUOIT			10/1/2017	SUN			Oct-17
33	1445	18	0	5	MAQUOIT			10/1/2017	SUN			Oct-17
34	1515	70	168	1	MACHIGONNE	2	9	10/1/2017	SUN			Oct-17
35	1615	9	5	5	AUCOCISCO			10/1/2017	SUN			Oct-17
36	1615	14	15	4	AUCOCISCO			10/1/2017	SUN			Oct-17
37	1615	0	8	2	AUCOCISCO			10/1/2017	SUN			Oct-17
38	1615	0	12	3	AUCOCISCO			10/1/2017	SUN			Oct-17

Passenger ridership data from the period 2004 – 2018 was used in all calculations. While many methods of economic data analysis utilize the CAGR, or Compound Annual Growth Rate Calculation, this analysis will utilize regression calculations to determine growth rates and projections. The primary reason for this, is that when analyzing 2004 to 2018, CAGR only accounts for the first and last year of data in the set and calculates the growth rate to get from one to the other over the sample period. The regression analysis performed here takes each individual data point into consideration when determining the rate of increase, or decrease, present in the sample set.

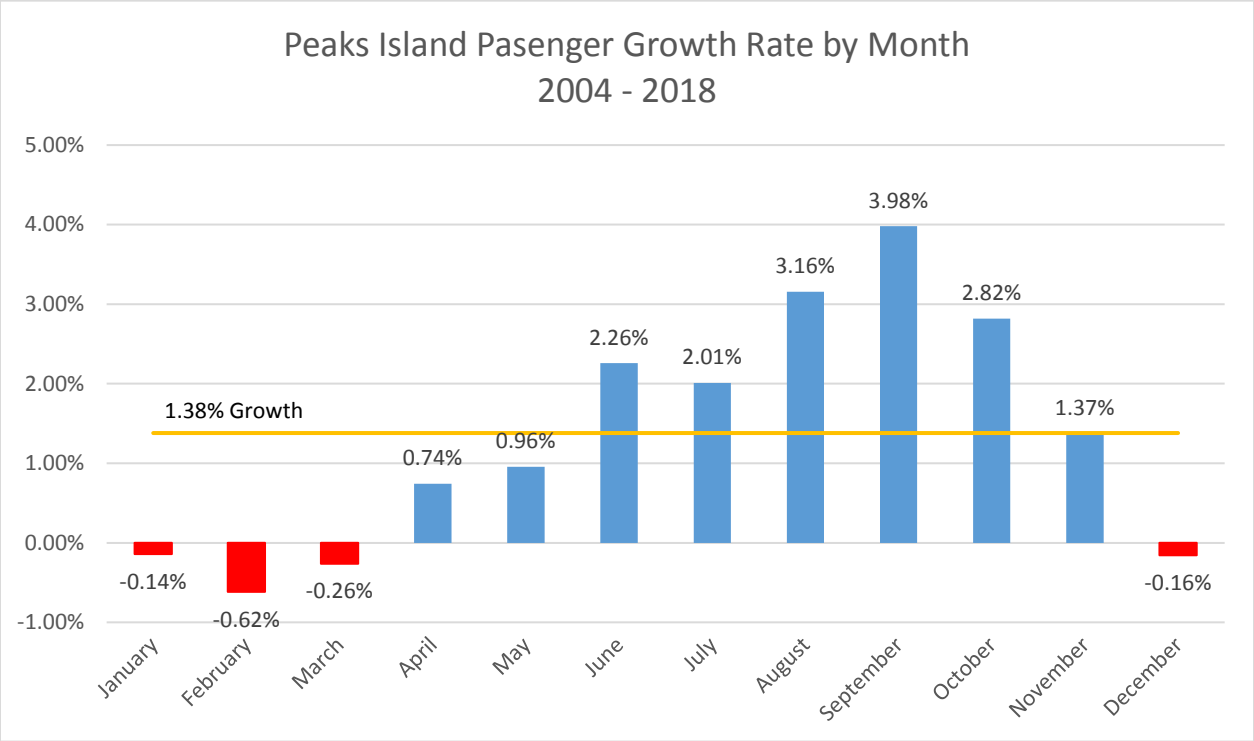
Due to time constraints, the data was aggregated, by month, and analyzed, from January 2004 to December 2018, the last full year of ridership data available.

If further ridership and capacity data analysis is desired, please review the Steer Davies Gleave (SDG) reports that are part of the KPFF report appendices. SDG analyzed ridership and vehicles transported as well as capacity by day and even time of day. CBITD did not find it necessary to duplicate this effort in order to create forward looking projections, as requested by the Board or Directors.

Monthly Ridership Data

Passenger ridership data was plotted by month, from 2004 through 2018. The aforementioned regression analysis was run looking at each month individually and determining the year to year growth rate for each.

The results appear below, in chart format, from January through December.



An interesting trend emerged, for 4 months of the year, Peaks Island Ridership has experienced negative growth rates from 2004 through 2018. As you can see, those months are January, February, March and December. In the busy summer season, growth rates are much higher, in July August and September, rates increase to well over 2 and 3 percent. When regression analysis was performed for the entire year as a whole, the computed growth rate was 1.38% over the 15 year period. CBITD is comfortable using this conservative growth rate, as it is well below the suggested growth rates contained in the KPFF final report, which are closer to 1.8%.[2]

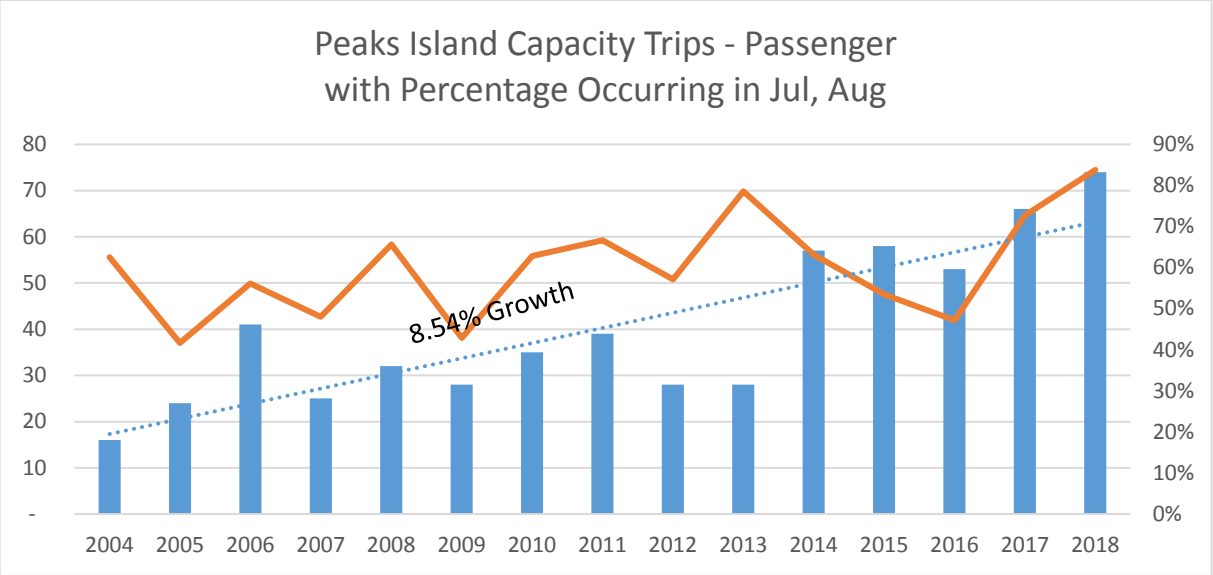
A deeper dive into this analysis demonstrates the potential that the ***seasonality of CBL ridership is intensifying and data suggests that winters are getting less crowded, while summers are getting more crowded.*** While it is difficult to know exactly why this is happening, it is presumable that island demographics are changing to cause the negative shift, while tourism is making up the bulk of ridership increases. It's interesting to note that shoulder seasons are experiencing rapid growth than the height of summer, where September is nearly 4% annual growth over the past 15 years from 2004 to 2018.

[2] KPFF Report, Appendices, Steer Davies Gleave Report, Table 11. P. 6 of 12.

Clearly there is a shift in passenger demand that CBITD must not only be aware of, but must plan to accommodate in an efficient and cost effective manner.

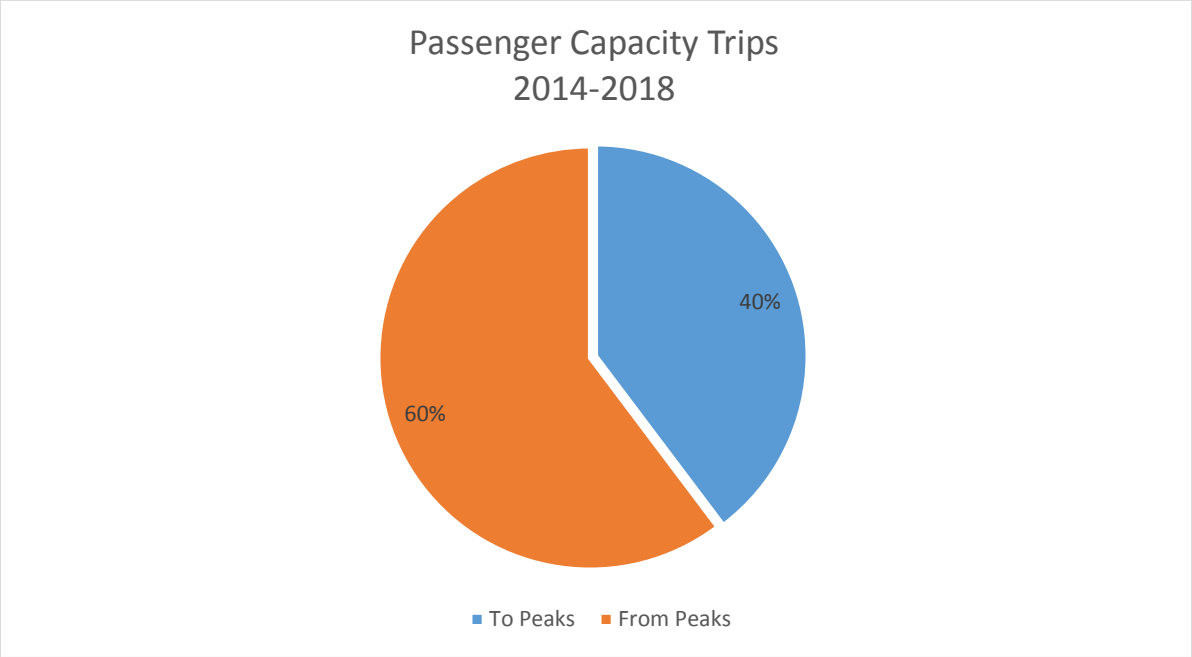
Passenger Trips at Capacity

Machigonne passenger trips that reached capacity from 2004 to 2018 were also analyzed and charted on a year to year basis. In the chart below, the blue bars are number of passenger capacity trips during that year, which the orange line is the percentage of passenger capacity trips that occurred during the months of July and August.



Examining the data reveals that passenger capacity trips are increasing in occurrence at a rate of 8.54% over the sample period of 15 years, an alarming trend. Additionally, the data revealed that these trips are increasingly becoming a July and August issue with over 84% of them occurring during those two months in 2018, and only 42% in 2005. ***This trend, coupled with the monthly ridership growth trend discussed above indicates that without additional capacity, it's possible that past summer ridership growth rates may not be sustainable into the future.***

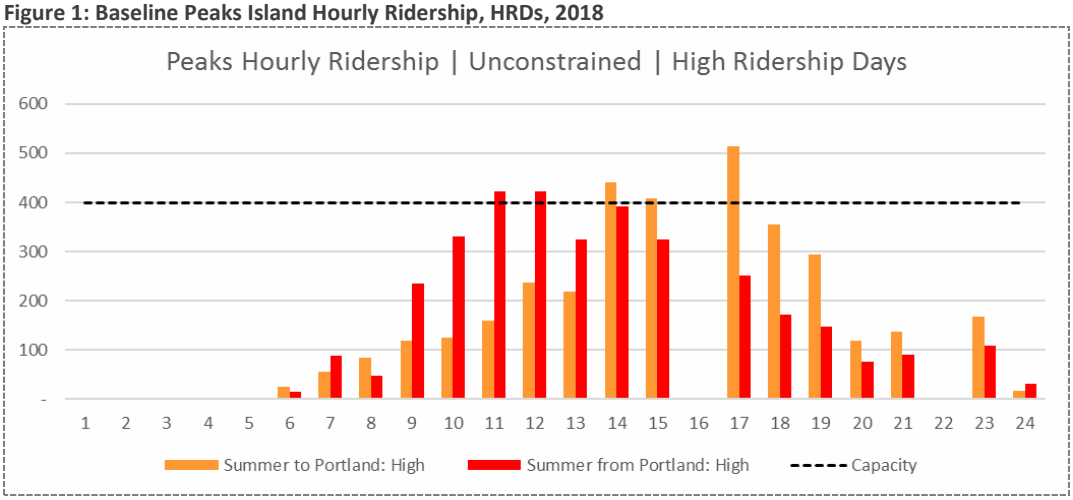
Passenger trips at capacity were also analyzed over the past 5 years, from 2014 to 2018, based on the direction of travel. Since 2014, there were 272 Peaks Island trips that reached passenger capacity, with 162 originating at Peaks Island and terminating at Portland.



Vessel capacity needs to be considered in both directions, and if CBITD, the Board of Directors, or the Public is concerned with a larger vessel transporting more people to Peaks, it also needs to be understood that this same capacity will be available to passengers who are already on Peaks, trying to return to Portland.

Steer Davies Gleave performed very detailed and sophisticated analysis on this subject in the KPFF report. See the following chart, excerpted from the report.[3]

Figure 1: Baseline Peaks Island Hourly Ridership, HRDs, 2018



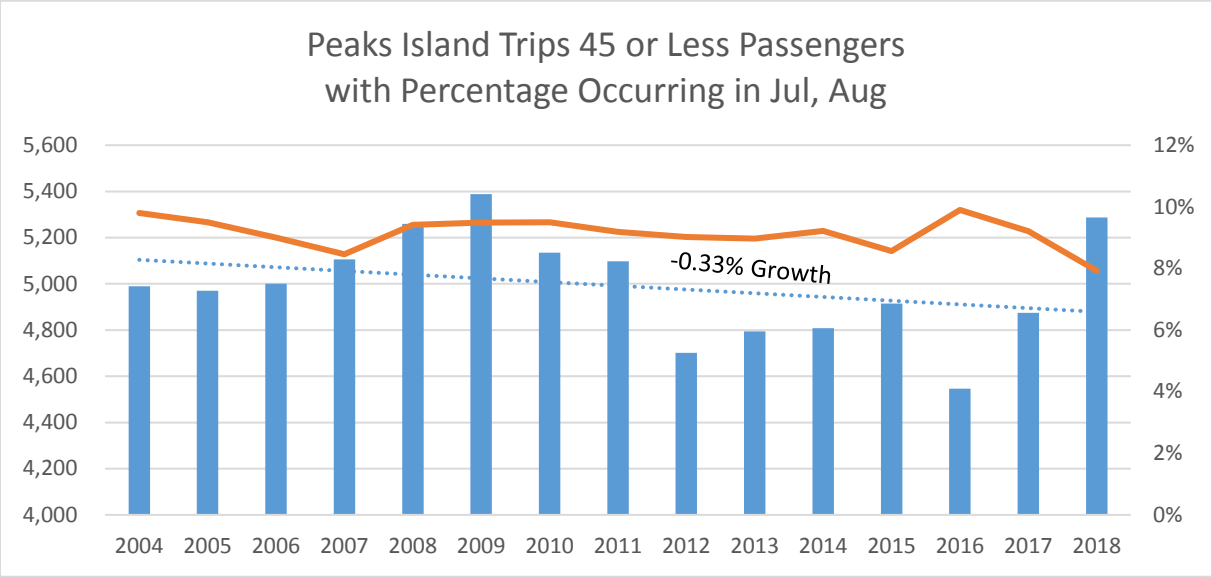
[3] KPFF Report, Appendices, Steer Davies Gleave Report, Figure 1. P. 3 of 12.

This analysis shows that on high ridership days assuming a capacity of 399, there are 2 constrained trips from Portland to Peaks, the 1100hrs and 1200hrs and 3 constrained trips from Peaks to Portland, the 1400hrs, 1500hrs and 1700hrs.

It can also be inferred from the SDG chart that the highest number of unaccommodated passengers occurs on high ridership days, at Peaks Island, for the 1700 trip. ***The chart suggests that this trip frequently leaves more than 100 passengers on the island, waiting for the next trip and hour later.*** These two analyses are consistent in findings and underscore the importance of moving people to their destination, regardless of their direction of travel.

Passenger Trips below Capacity

For purposes of analysis, passenger trips below capacity was defined at 45 or less passengers on a trip. The occurrence of these trips was also queried, analyzed and charted over the 15-year sample period. In the chart below, the blue bars represent the number of trips, each year, with 45 passengers or less, and the orange line shows the percentage of these trips that occurred during the busy summer months of July and August.

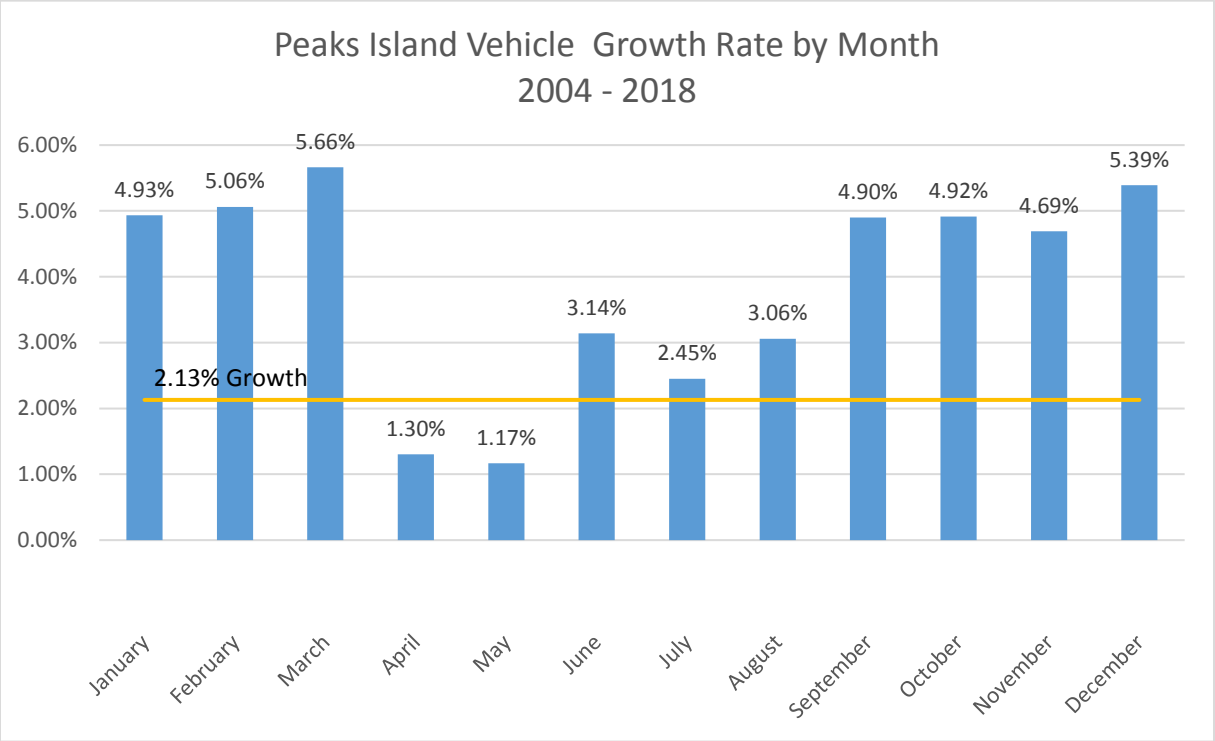


The number of trips with 45 or less passengers is a stable or declining trend over the past 15 years and is decreasing at an annual average of -0.33%. Furthermore, the frequency of these trips is during the busy summer months is remaining relatively stable. No analysis was done to determine the time of departure frequency for these trips.

Monthly Vehicle Data

Vehicle ridership data was plotted by month, from 2004 through 2018.[4] The aforementioned regression analysis was run looking at each month individually and determining the year to year growth rate for each.

The results appear below, in chart format, from January through December.



Vehicles transported to/from Peaks Island experienced significant and positive annual growth in each and every month on the calendar. ***However, the periods of highest growth coincided with the District's slowest seasons***, January through March and September through December. This is an important trend to contemplate and the ***data signifies that the vehicle deck is seeing more and more cars during non-peak season, year over year***. Presumably, island residents, contractors and businesses account for the majority of this traffic increase during fall, winter and spring schedules.

When regression analysis was performed for the entire year as a whole, the computed growth rate was 2.13% over the 15-year period. The KPFF report indicated that a 10-year growth rate for Peaks Island vehicle traffic was 1.37%[5], which we believe to be quite low. In recent years, vehicle traffic has risen as much as 14% over a 3-year period, and the chart above indicates that much of the year, 3-5% increases are not uncommon. Additionally, SDG did not have the benefit of 2018 data, as their dataset was

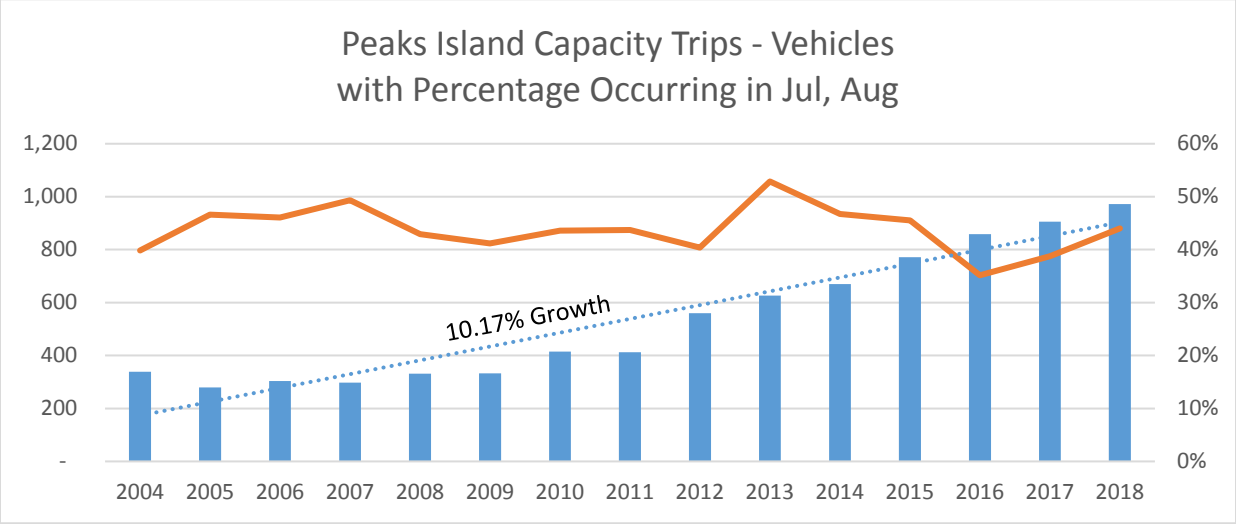
[4] Months in which Machigonne was in drydock, prior to 2015, were assumed to be equal to the prior month. During this period, all planned Machigonne drydocks were in March or April. After 2015, actual data was used for vehicles transported aboard Lionel Plante and Associates vessels.

[5] KPFF Report, Appendices, Steer Davies Gleave Report, Table 5. P. 4 of 12.

truncated at the end of 2017. The additional year of data, and further analysis into vehicle traffic allows CBITD to be comfortable using a growth rate of 2.13%.[6]

Vehicle Trips at Capacity

Vehicle trips at capacity is a difficult metric to measure, as the Machigonne's vehicle deck has a capacity of 12, vehicle size dependent. After speaking with CBITD staff, Gretchen Frank, who work as Mate year round a decision was made to designate capacity trip as a trip with 10 vehicles or more.



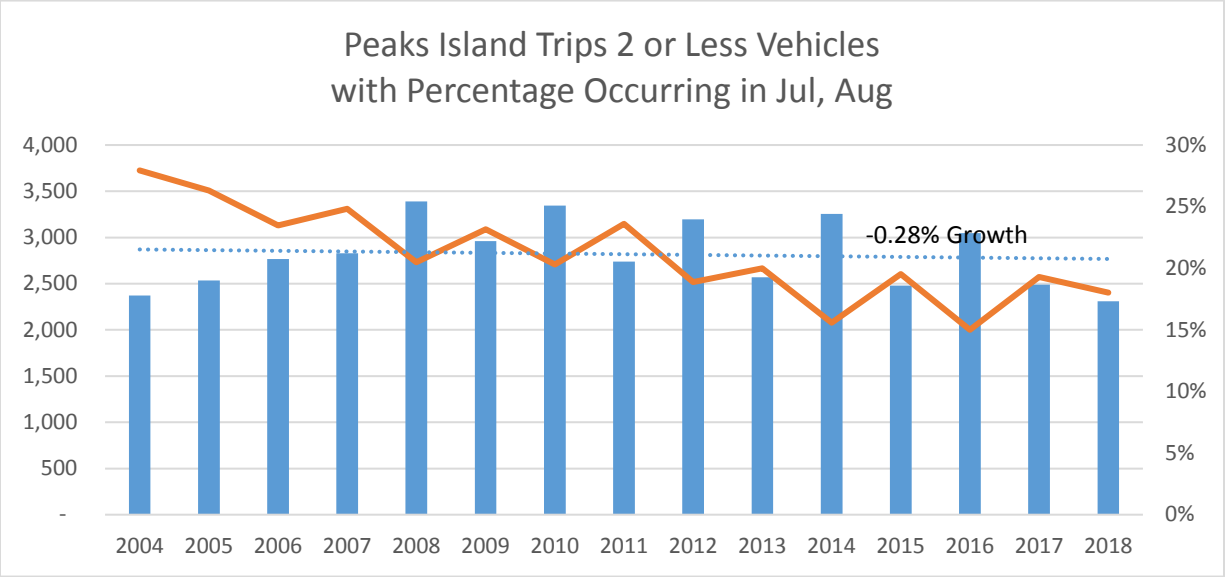
As the chart suggests, ***vehicle trips at capacity are experiencing a sharp increase from year to year – over 10% annually.*** The data sample suggested that this condition is occurring at a 10.17% growth rate over the 15-year period, despite the 2008 -2009 recession being included in the sample set. The July, August frequency of these vehicle capacity trips is holding steady at around 40%, ***meaning that almost 60% of the vehicle capacity trips are occurring during non-peak season.***

Vehicle Trips below Capacity

Vehicle trips with 2 or less vehicles on board have also been analyzed and charted below. The blue bars show the number of trips per year that met this condition and the orange line is the percentage of trips

[6] Discussed with consultant, Carla Sawyer, Progressions Inc., who agreed that 2.13% should be used in forecast.

during that year that occurred in July or August.



Vehicle trips with 2 or less vehicles on deck are experiencing a stable or slightly declining annual trend, at -0.28% per year. The frequency of this occurrence is declining during busy summer months, as about 17% of the low vehicle trips occurred during July and August of 2018. ***The vehicle data suggests, almost universally, that CBITD can expect year round vehicle traffic increases into the future, and that residents are becoming increasingly more reliant on vehicle service with each passing year.***

Projections – Revenue Analysis

As described above, revenue projections began with trend analysis of prior 15 years of ridership data. As shown on P. 4, the growth trend determined to be most conservative was 1.38%, which was applied to Peaks Island Ridership for the useful life of the next vessel, 30 years, terminating in 2048. Yellow bars on the chart below are actual, historical numbers, while blue are projected values.

Ridership

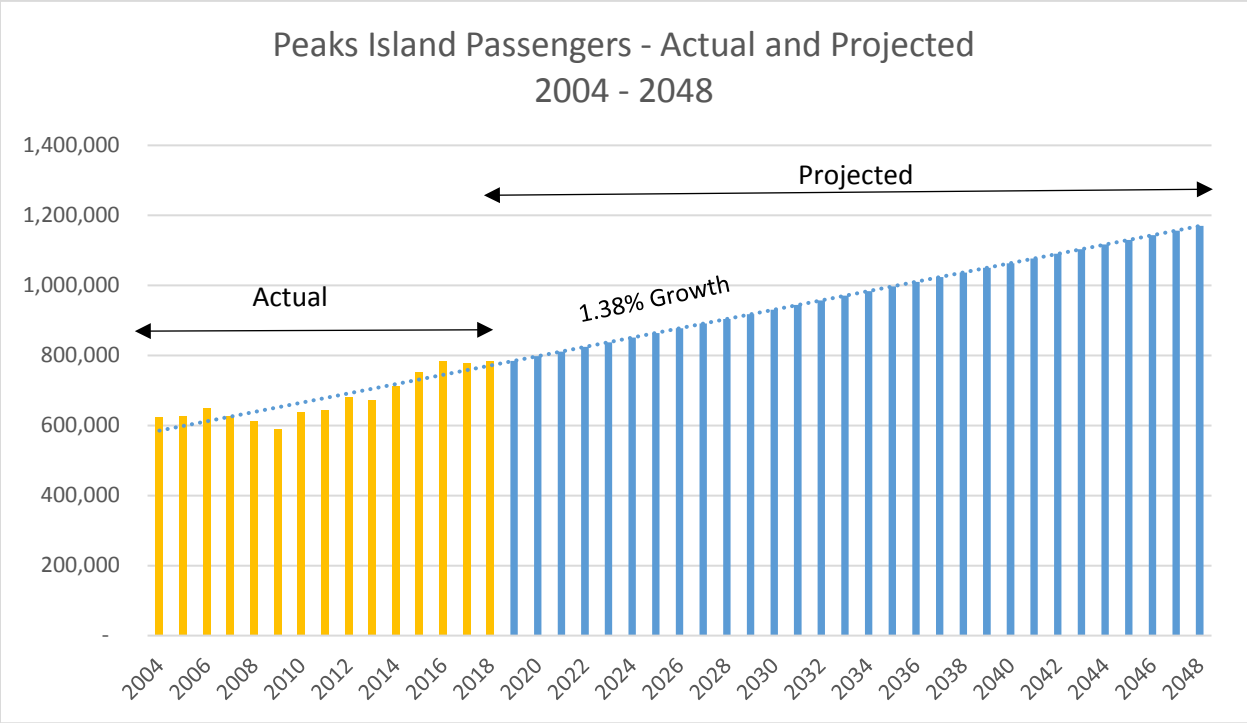
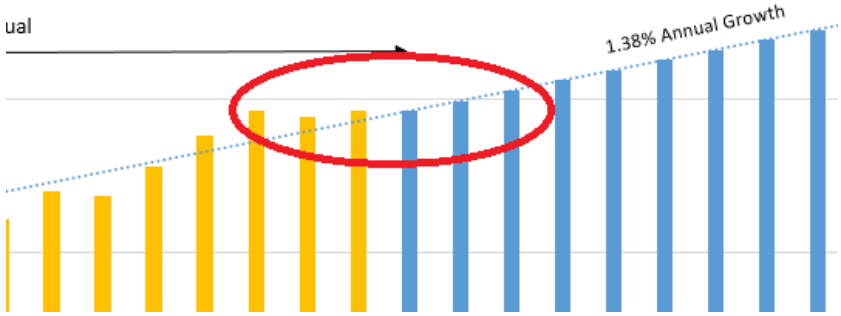
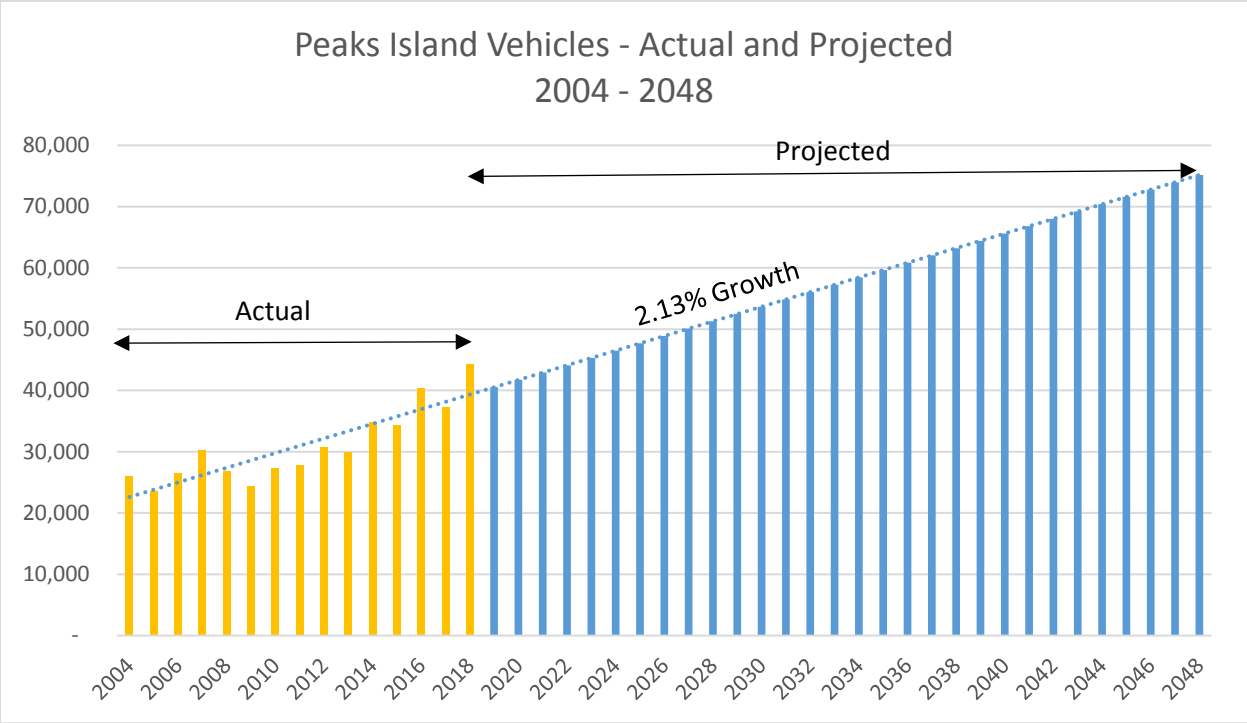


Chart Zoom

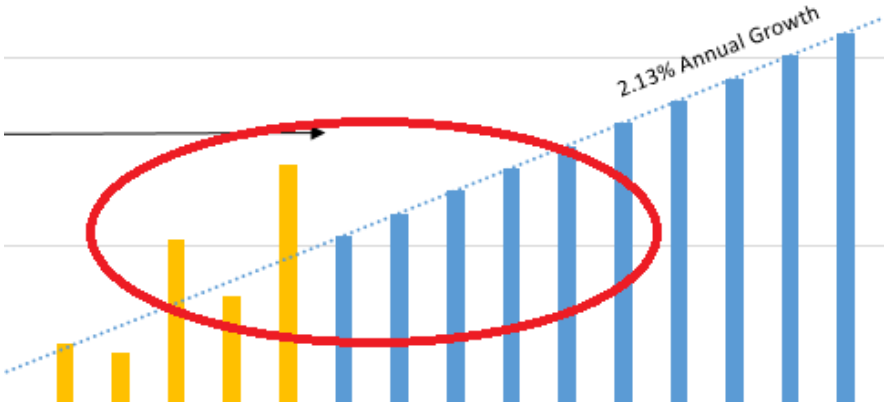


As a result of the longer sample data period and shallower growth trend line at 1.38%, note that 2015 through 2018 actual historical data points lay above the imputed growth trend line, while the first year of projections, 2019 are actually a decrease from 2018. ***This singular point serves to reinforce exactly how conservative these estimates are.*** While CBITD does not expect this to happen, it demonstrates the dampening effect of such long-term analysis, inclusive of economic downturns, in producing very conservative forward looking estimates.

Vehicles



Vehicle projections have been accomplished similarly to passengers. The 2.13% growth rate derived on P. 8 was applied to the same future period terminating in 2048. In much the same way the passenger forecast can be considered extremely conservative, so too can the vehicle analysis.



Note that 2016 and 2018 actual historical data points lay above the growth trend line (2017 was a DD year), while the first 4 years of projections, 2019 to 2022 are actually a decrease from 2018. Not unlike the passenger analysis, CBITD does not expect this to happen, it demonstrates the dampening effect of such long-term analysis, inclusive of economic downturns, in producing very conservative forward-looking estimates.

These ridership and vehicle projections form the base of financial analysis for revenue, and any "tests" performed that increase, or decrease ridership or vehicles transported will be applied to these projections. As stated above, these forward-looking estimates are very conservative and demonstrate growth rates that are significantly lower than CBITD has experienced in the past 2, 3 or even 5 years.

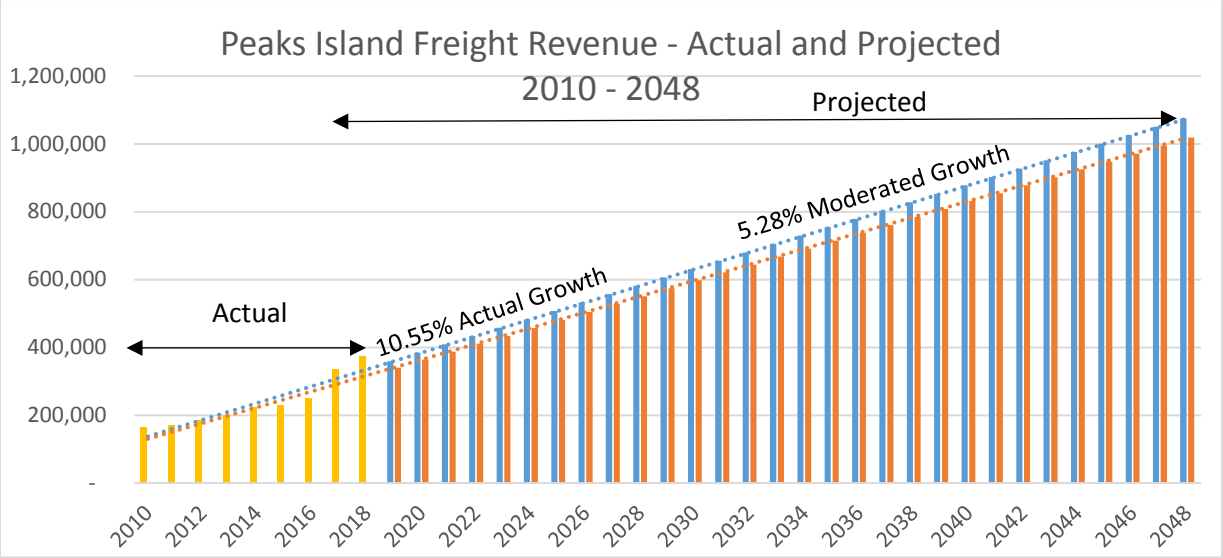
Pricing

To correlate ridership and vehicle revenue with ridership and vehicle projections, this analysis used the average revenue realization per unit, or the simple relationship between actual counts of ridership, vehicles and actual revenues from 2018. The revenue calculation results in unlinked, or one-way average revenue numbers, which need to be doubled to approximate round trip ticket prices. It is expected that these numbers would fall short of full round trip adult ticket pricing due to the number of half price fares sold. Similarly, for vehicle revenues, Wednesday tickets sold would move the average revenue realized per unit downward. ***In order to meet the task of creating a conservative analysis, the forward looking analysis will assume 2018 pricing levels for the term of the forecast.***

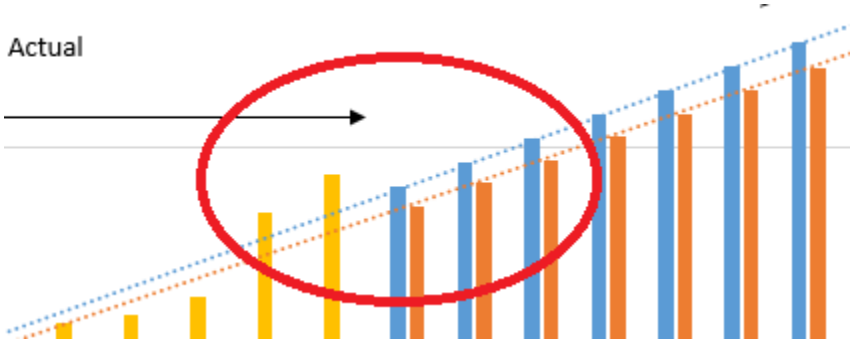
2018	Total Peaks Island Passenger Rev	Avg Rev/Passenger Unlinked	Total Peaks Island Vehicle Rev	Avg Rev/Vehicle Unlinked
January	$ 42,278	**$ 1.35**	$ 40,058	**$ 16.54**
February	$ 39,311	**$ 1.29**	$ 40,736	**$ 17.99**
March	$ 48,267	**$ 1.39**	$ 47,489	**$ 18.42**
April	$ 100,824	**$ 2.43**	$ 139,339	**$ 42.10**
May	$ 140,123	**$ 2.27**	$ 84,513	**$ 23.14**
June	$ 261,618	**$ 2.69**	$ 133,884	**$ 27.11**
July	$ 418,466	**$ 3.01**	$ 178,131	**$ 32.41**
August	$ 390,165	**$ 2.86**	$ 177,839	**$ 31.25**
September	$ 230,112	**$ 2.72**	$ 113,179	**$ 30.91**
October	$ 99,420	**$ 1.76**	$ 82,821	**$ 19.80**
November	$ 54,457	**$ 1.52**	$ 53,697	**$ 17.08**
December	$ 49,314	**$ 1.40**	$ 51,855	**$ 17.40**

Freight Revenue Analysis

To complete the revenue forecast, it was necessary to project freight revenues into the future. Freight revenue data was not easily accessible from 2004 to 2009, so this analysis was created utilizing 2010 to 2018, which was readily available.



Freight revenues from 2010 to 2018 have experienced sharp increases, of approximately 10.55% annual growth, however, in order to preserve the conservative approach used in these forward looking projections, this growth rate was halved to 5.28% projected annually for the next 30 years. Halving this rate produced similar results to the included passenger and vehicle analysis, in that prior year actuals lay above the growth trend line.



In the figure above, 2017 and 2018 actuals lie above the trend, the blue dotted line representing 10.15% growth and the orange representing 5.28%. As a result, 2019 through 2021, again constitute a decrease from 2018 freight revenues. While CBITD does not necessarily believe this will happen, it serves to demonstrate the forecast's conservatism. Freight revenue increases are clearly driven by resident island populations and the ease and convenience of shopping for goods delivered through the mail. Resident's reliance on online buying is projected to continue well into the future.

Revenue Results

Using forecasts for Passengers, Vehicles and Freight, and revenue recognized per unit, described above, the following monthly and annual revenue pro formas were generated. Revenue categories that were not contemplated in this exercise include, Mail, Tours, Charter and Catering, Advertising, Vending, Promotional, Other Misc. Income or Interest Income.

Passenger

	Passenger												
Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
2019	$42,259	$ 34,497	$45,452	$ 99,427	$131,158	$229,357	$388,897	$406,896	$ 263,275	$114,184	$ 64,539	$ 48,458	**$1,868,398**
2020	$42,194	$ 34,267	$45,320	$100,133	$132,388	$234,017	$395,938	$417,020	$ 271,661	$116,924	$ 65,434	$ 48,366	**$1,903,661**
2021	$42,129	$ 34,037	$45,187	$100,838	$133,618	$238,677	$402,979	$427,144	$ 280,048	$119,663	$ 66,329	$ 48,274	**$1,938,924**
2022	$42,065	$ 33,807	$45,054	$101,544	$134,848	$243,338	$410,020	$437,268	$ 288,435	$122,402	$ 67,224	$ 48,182	**$1,974,187**
2023	$42,000	$ 33,577	$44,922	$102,250	$136,077	$247,998	$417,061	$447,392	$ 296,822	$125,142	$ 68,120	$ 48,090	**$2,009,450**
2024	$41,935	$ 33,346	$44,789	$102,956	$137,307	$252,658	$424,102	$457,516	$ 305,209	$127,881	$ 69,015	$ 47,998	**$2,044,713**
2025	$41,870	$ 33,116	$44,656	$103,661	$138,537	$257,319	$431,143	$467,640	$ 313,596	$130,621	$ 69,910	$ 47,907	**$2,079,976**

Vehicle

	Vehicle												
Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
2019	$35,206	$ 35,114	$38,184	$ 90,358	$70,477	$120,149	$169,246	$172,009	$ 127,306	$ 75,565	$ 53,643	$ 51,404	**$1,038,661**
2020	$36,411	$ 36,378	$39,796	$ 93,043	$71,455	$123,236	$172,644	$176,214	$ 131,901	$ 78,276	$ 55,500	$ 53,324	**$1,068,179**
2021	$37,616	$ 37,642	$41,409	$ 95,728	$72,434	$126,323	$176,042	$180,420	$ 136,495	$ 80,988	$ 57,356	$ 55,245	**$1,097,698**
2022	$38,820	$ 38,906	$43,021	$ 98,413	$73,413	$129,410	$179,440	$184,625	$ 141,090	$ 83,700	$ 59,212	$ 57,166	**$1,127,217**
2023	$40,025	$ 40,170	$44,634	$101,098	$74,392	$132,498	$182,838	$188,830	$ 145,685	$ 86,411	$ 61,069	$ 59,086	**$1,156,735**
2024	$41,230	$ 41,434	$46,246	$103,783	$75,370	$135,585	$186,236	$193,035	$ 150,279	$ 89,123	$ 62,925	$ 61,007	**$1,186,254**
2025	$42,434	$ 42,698	$47,858	$106,468	$76,349	$138,672	$189,634	$197,241	$ 154,874	$ 91,835	$ 64,782	$ 62,928	**$1,215,772**

Freight

	Freight												
Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
2019	$14,958	$12,800	$14,746	$21,424	$34,223	$41,221	$45,378	$45,259	$38,404	$28,885	$22,036	$21,196	**$ 340,529**
2020	$15,946	$13,735	$15,707	$22,763	$36,361	$43,858	$48,174	$48,431	$41,623	$31,093	$23,682	$22,532	**$ 363,906**
2021	$16,934	$14,670	$16,669	$24,102	$38,499	$46,496	$50,971	$51,604	$44,842	$33,301	$25,328	$23,869	**$ 387,283**
2022	$17,921	$15,605	$17,630	$25,441	$40,637	$49,133	$53,767	$54,776	$48,061	$35,509	$26,974	$25,205	**$ 410,660**
2023	$18,909	$16,540	$18,591	$26,780	$42,775	$51,771	$56,563	$57,949	$51,279	$37,717	$28,621	$26,541	**$ 434,037**
2024	$19,896	$17,475	$19,552	$28,120	$44,914	$54,409	$59,360	$61,122	$54,498	$39,925	$30,267	$27,877	**$ 457,414**
2025	$20,884	$18,410	$20,513	$29,459	$47,052	$57,046	$62,156	$64,294	$57,717	$42,133	$31,913	$29,213	**$ 480,791**

2018 Actual Expenses

Base Cost Data for 2018 was used to extrapolate anticipated costs for vessels looking forward. These costs were utilized as a base for making suggested and inferred changes to cost structure of three vessel designs. In some cases, such as Fuel and Insurance, these costs were ignored altogether and industry standard metrics were used to estimate forward looking costs.

Personnel Expenses

		January	February	March	April	May	June	July	August	September	October	November	December	Total
5. EXPENSE: PERSONNEL PEAKS SERVICE														
	SR CAPTAINS - REGULAR	14,201	12,826	14,201	13,742	14,201	13,742	14,201	14,201	13,742	14,201	13,742	14,201	167,200
	SR CAPTAINS - OVERTIME	3,759	3,395	3,759	3,638	3,759	3,638	3,759	3,759	3,638	3,759	3,638	3,759	44,259
	MATE - REGULAR	9,723	8,782	9,723	9,410	9,723	9,410	9,723	9,723	9,410	9,723	9,410	9,723	114,482
	MATE - OVERTIME	2,574	2,325	2,574	2,491	2,574	2,491	2,574	2,574	2,491	2,574	2,491	2,574	30,304
	UNION DECKHANDS - REGULAR	16,098	14,540	16,098	15,578	16,098	8,049	8,049	8,049	8,049	17,713	15,578	16,098	159,997
	UNION DECKHANDS - OVERTIME	4,261	3,849	4,261	4,124	4,261	2,131	2,131	2,131	2,131	4,689	4,124	4,261	42,352
	NONUNION DH - REGULAR	0	0	0	0	0	7,462	12,176	12,176	7,135	0	0	0	38,949
	CREWS	**50,615**	**45,717**	**50,615**	**48,983**	**50,615**	**46,922**	**52,611**	**52,611**	**46,595**	**52,659**	**48,983**	**50,615**	**597,542**
	CROWD CONTROL HOURS	0	0	0	0	0	128	256	256	128	0	0	0	768
	CROWD CONTROL - REGULAR	0	0	0	0	0	1,396	2,793	2,793	1,396	0	0	0	8,379
	CROWD CONTROL	**0**	**0**	**0**	**0**	**0**	**1,396**	**2,793**	**2,793**	**1,396**	**0**	**0**	**0**	**8,379**
Payroll-Salaries		**50,615**	**45,717**	**50,615**	**48,983**	**50,615**	**48,319**	**55,404**	**55,404**	**47,991**	**52,659**	**48,983**	**50,615**	**605,921**
	FICA	**3,872**	**3,497**	**3,872**	**3,747**	**3,872**	**3,696**	**4,238**	**4,238**	**3,671**	**4,028**	**3,747**	**3,872**	**46,353**
Total		**54,487**	**49,214**	**54,487**	**52,730**	**54,487**	**52,015**	**59,643**	**59,643**	**51,663**	**56,687**	**52,730**	**54,487**	**652,274**

Vessel Expenses

		January	February	March	April	May	June	July	August	September	October	November	December	Total
6. EXPENSE: VESSEL PEAKS SERVICE														
	GENERAL REPAIR MACHIGONNE	1,884	5,509	7,965	349	12,764	5,455	3,033	1,912	3,008	128	3,694	2,332	48,033
	DRYDOCK MACHIGONNE	0	0	237,000	237,000	0	0	0	0	0	0	0	0	474,000
	DIVING MACHIGONNE	2,376	1,100	859	960	1,996	2,000	1,179	1,100	980	1,337	1,321	880	16,088
	OIL CHANGE MACHIGONNE	4,519	0	1,596	2,602	2,496	2,500	826	1,420	0	0	2,099	0	18,058
	MACHIGONNE	**8,779**	**6,609**	**247,420**	**240,911**	**17,256**	**9,955**	**5,038**	**4,432**	**3,988**	**1,465**	**7,114**	**3,212**	**556,179**
	FUEL MACHIGONNE	21,368	12,382	13,996	15,482	29,253	11,143	13,055	26,696	17,639	13,488	24,614	15,467	214,583
Fuel		**21,368**	**12,382**	**13,996**	**15,482**	**29,253**	**11,143**	**13,055**	**26,696**	**17,639**	**13,488**	**24,614**	**15,467**	**214,583**
Insurance Boat		**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**1,362**	**16,344**
Total		**31,509**	**20,353**	**262,778**	**257,755**	**47,871**	**22,460**	**19,455**	**32,490**	**22,989**	**16,315**	**33,090**	**20,041**	**787,106**

Operations Expense

		January	February	March	April	May	June	July	August	September	October	November	December	Total
7. EXPENSE: OPERATIONS PEAKS SERVICE														
Barge Subcontracting		**0**	**0**	**14,000**	**14,000**	**0**	**900**	**3,600**	**3,600**	**0**	**0**	**0**	**0**	**36,100**
Total		**0**	**0**	**14,000**	**14,000**	**0**	**900**	**3,600**	**3,600**	**0**	**0**	**0**	**0**	**36,100**

Operating Surplus, Grant Revenues and Surplus/Loss

		January	February	March	April	May	June	July	August	September	October	November	December	Total
INDIRECT COST ALLOCATION		**6,365**	**4,111**	**53,081**	**52,067**	**9,670**	**4,537**	**3,930**	**6,563**	**4,644**	**3,296**	**6,684**	**4,048**	**158,995**
TOTAL EXPENSE PEAKS SERVICE		**85,996**	**69,567**	**331,265**	**324,485**	**102,358**	**75,375**	**82,698**	**95,733**	**74,652**	**73,002**	**85,820**	**74,528**	**1,475,480**
NET OPER INCOME (LOSS) TOTAL PEAKS		**10,661**	**21,259**	**-271,043**	**-111,070**	**152,876**	**358,990**	**561,207**	**511,932**	**300,666**	**139,815**	**38,613**	**45,657**	**1,759,564**
	FTA PM REVENUE	8,442	6,355	237,919	231,660	16,593	9,573	4,845	4,262	3,835	1,409	6,841	3,089	534,822
	FTA RURAL REVENUE	0	0	0	0	0	0	0	0	0	0	0	0	0
	STATE SUBSIDY REVENUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL		**8,442**	**6,355**	**237,919**	**231,660**	**16,593**	**9,573**	**4,845**	**4,262**	**3,835**	**1,409**	**6,841**	**3,089**	**534,822**
CONTRIBUTION PEAKS ONLY		**19,103**	**27,614**	**-33,124**	**120,590**	**169,469**	**368,563**	**566,052**	**516,194**	**304,501**	**141,224**	**45,454**	**48,746**	**2,294,386**

As you can see here, Peaks Island service makes a significant contribution to CBITD as an organization and creates system wide benefits. In 2018, the contribution amount is estimated at over $2M.

Vessel Capacity Comparison: Provided by Elliott Bay Design Group

The District is currently under contract with Elliott Bay Design Group to perform analysis and to ultimately design the next car ferry. CBITD has tasked them with creating estimates for various cost structure components for the three vessel configurations being considered presently. The results of Elliott Bay Design' Group's analysis appear below.

Construction Cost

Option	Description	Size	Est. Cost to Build
1	12/399	136' x 40' x 12'	$ 9.3M
2	15/399	164' x 40' x 12'	$ 9.8M
3	15/599	164' x 40' x 12'	$ 10.1M

Fuel Usage

Option	Description	Fuel per Day	Notes
1	12/399	335 gallons	Based on 17 RT/Day
2	15/399	329 gallons	Based on 17 RT/Day
3	15/599	333 gallons	Based on 17 RT/Day

Anticipated Crewing Requirements

Option	Description	No. of Masters	No. of Mates	No. of Deckhands
1	12/399	1	1	4
2	15/399	1	1	4
3	15/599	1	1	6

Expected Maintenance

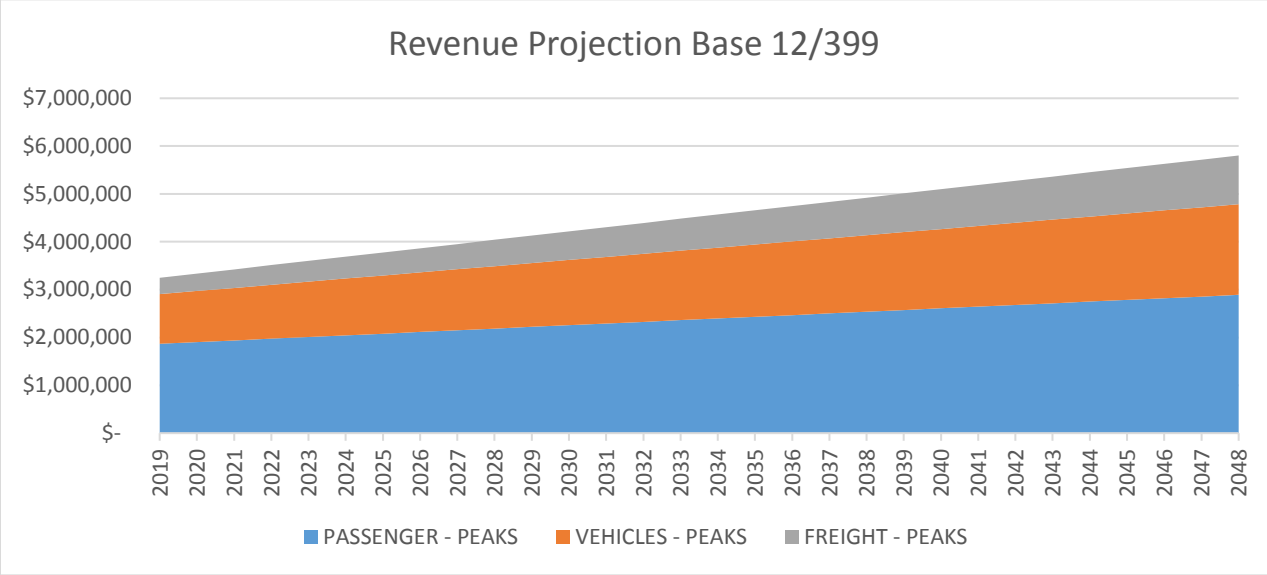
Option	Description	Hull Sq Footage	% Change	Superst. Sq Footage	Superst. % Change
1	12/399	12,000	-16%	15,100	-20%
2	15/399	14,325	Baseline	14,300	-24%
3	15/599	14,325	Baseline	18,900	Baseline

Insurance Cost

Option	Description	Estimated Premiums
1	12/399	-8%
2	15/399	-3%
3	15/599	Baseline

Base Projections:

Option 1: 12 Car/399 Passenger Financial Projection[7]

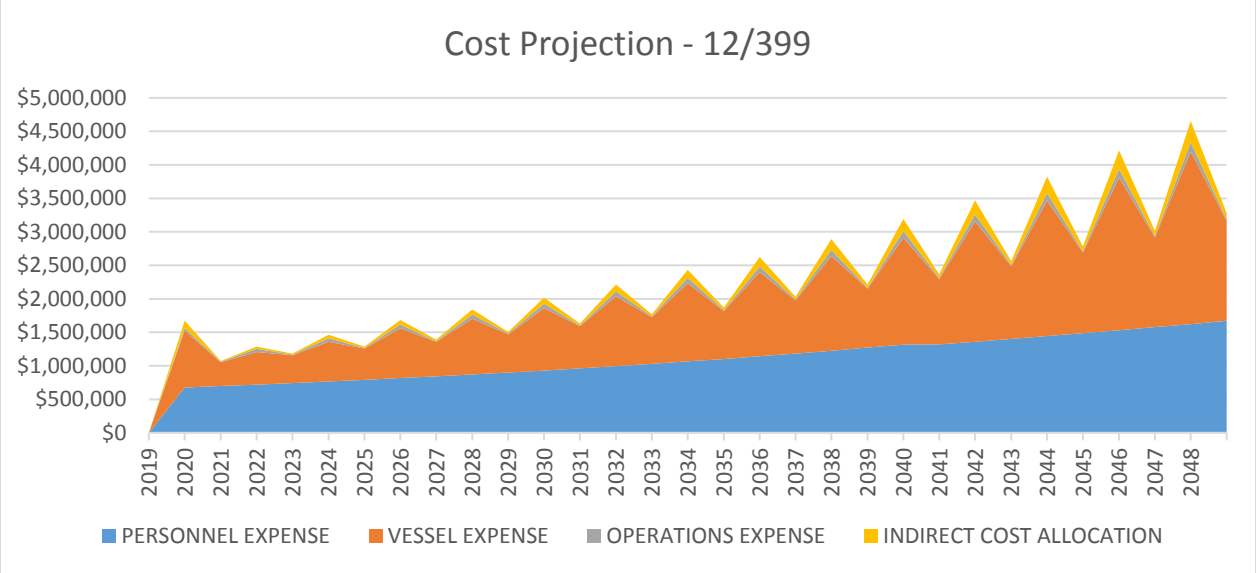


[7]Assumptions:
Crew hours worked are estimated and multiplied by projected MMA negotiated wages.
Assume 3% wage increases annually for projection period
Assume 3% increase on diving services
Assume 5% increase on oil changes
Assume first drydock 100K, second 150K, third, 250K, then 15% increase biannually
Assume 5% fuel price increase, quantity as defined by EBDG.*
Assume 8% annual increase in maintenance after year 4.
Insurance at .43% of vessel cost for 12/399, others impacted as estimated by EBDG.
Barge service requirement, and crowd control requirement will increase at rate of capacity trips – 8.54%
Crowd Control will take 3 people, 8 hours, 4 days per week in summer, (max out at 4000 hrs).

Revenue – selected data

1. REVENUES:		2020	2025	2030	2035	2040	2045	2048
	PASSENGER - PEAKS	$ 1,903,661	$ 2,079,976	$ 2,256,291	$ 2,432,606	$ 2,608,921	$ 2,785,236	$ 2,891,025
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,335,746**	**$ 3,776,540**	**$ 4,217,333**	**$ 4,658,126**	**$ 5,098,920**	**$ 5,539,713**	**$ 5,804,189**

Cost Projection



Cost – Selected Data

Personnel

		2020	2025	2030	2035	2040	2045	2048
5. EXPENSE: PERSONNEL PEAKS SERVICE								
	SR CAPTAINS - REGULAR	177,382	205,635	238,387	276,356	320,372	371,399	405,838
	SR CAPTAINS - OVERTIME	46,954	54,433	63,102	73,153	84,804	98,312	107,428
	MATE - REGULAR	121,454	140,799	163,224	189,222	219,360	254,298	277,878
	MATE - OVERTIME	32,150	37,270	43,206	50,088	58,066	67,314	73,556
	UNION DECKHANDS - REGULAR	169,740	196,776	228,117	264,450	306,570	355,399	388,354
	UNION DECKHANDS - OVERTIME	44,931	52,088	60,384	70,001	81,151	94,076	102,799
	NONUNION DH - REGULAR	41,321	47,902	55,532	64,376	74,630	86,516	94,539
	CREWS	**$ 633,933**	**$ 734,902**	**$ 851,953**	**$ 987,647**	**$ 1,144,953**	**$ 1,327,314**	**$ 1,450,392**
	CROWD CONTROL HOURS	1,248	1,862	2,778	4,144	4,000	4,000	4,000
	TICKET OFFICE - REGULAR	$ 14,024	$ 24,255	$ 41,949	$ 72,553	$ 81,183	$ 94,114	$ 102,841
	TICKET OFFICE	**$ 14,024**	**$ 24,255**	**$ 41,949**	**$ 72,553**	**$ 81,183**	**$ 94,114**	**$ 102,841**
	FICA	**$ 49,569**	**$ 58,075**	**$ 68,383**	**$ 81,105**	**$ 93,799**	**$ 108,739**	**$ 118,822**
PERSONNEL EXPENSE		**$ 697,525**	**$ 817,232**	**$ 962,285**	**$ 1,141,304**	**$ 1,319,936**	**$ 1,530,167**	**$ 1,672,055**

Vessel

		2020	2025	2030	2035	2040	2045	2048
6. EXPENSE: VESSEL PEAKS SERVICE								
	GENERAL REPAIR	$ 12,008	$ 56,026	$ 82,320	$ 120,955	$ 177,723	$ 261,133	$ 328,953
	DRYDOCK	$ -	$ 250,000	$ -	$ 502,839	$ -	$ 1,011,389	$ -
	DIVING	$ 16,571	$ 19,210	$ 22,270	$ 25,817	$ 29,928	$ 34,695	$ 37,912
	OIL CHANGE	$ 18,961	$ 24,199	$ 30,885	$ 39,418	$ 50,309	$ 64,208	$ 74,329
	MACHIGONNE	**$ 47,540**	**$ 349,435**	**$ 135,475**	**$ 689,029**	**$ 257,960**	**$ 1,371,426**	**$ 441,194**
	Gallons Used	110,136	110,136	110,136	110,136	110,136	110,136	110,136
		$ 2.50	$ 3.19	$ 4.07	$ 5.20	$ 6.63	$ 8.46	$ 9.80
Fuel		$ 275,230	$ 351,271	$ 448,321	$ 572,184	$ 730,268	$ 932,028	$ 1,078,938
Insurance Boat		$ 41,190	$ 47,750	$ 55,356	$ 64,172	$ 74,393	$ 86,242	$ 94,239
VESSEL EXPENSE		**$ 363,960**	**$ 748,457**	**$ 639,152**	**$ 1,325,386**	**$ 1,062,621**	**$ 2,389,696**	**$ 1,614,372**

Operations

		2020	2025	2030	2035	2040	2045	2048
7. EXPENSE: OPERATIONS PEAKS SERVICE								
Barge Subcontracting		$ 8,900	$ 57,503	$ 13,278	$ 85,790	$ 19,810	$ 127,991	$ 27,282
OPERATIONS EXPENSE		**$ 8,900**	**$ 57,503**	**$ 13,278**	**$ 85,790**	**$ 19,810**	**$ 127,991**	**$ 27,282**

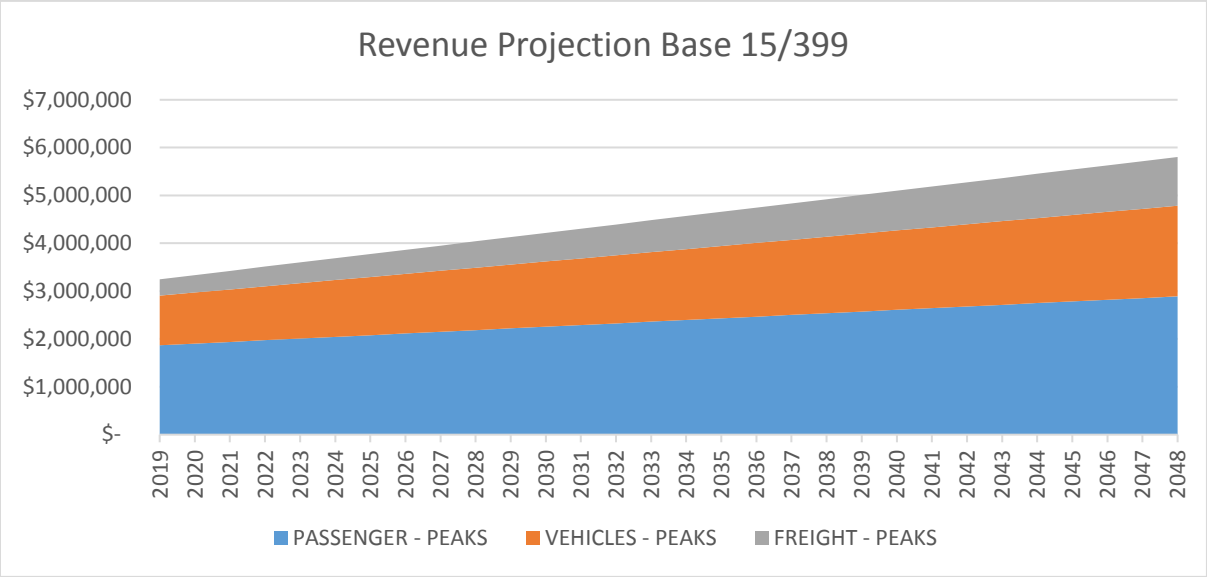
Contribution

		2020	2025	2030	2035	2040	2045	2048
INDIRECT COST ALLOCATION		$ 9,603	$ 70,586	$ 27,366	$ 139,184	$ 52,108	$ 277,028	$ 89,121
TOTAL EXPENSE PEAKS SERVICE		**$ 1,079,988**	**$ 1,693,778**	**$ 1,642,081**	**$ 2,691,664**	**$ 2,454,475**	**$ 4,324,883**	**$ 3,402,830**
NET OPERATING CONTRIBUTION		**$ 2,255,758**	**$ 2,082,762**	**$ 2,575,252**	**$ 1,966,462**	**$ 2,644,445**	**$ 1,214,830**	**$ 2,401,359**
TOTAL FTA PM GRANT REVENUE		$ 45,714	$ 336,017	$ 130,273	$ 662,571	$ 248,055	$ 1,318,764	$ 424,253
NET CONTRIBUTION		**$ 2,301,472**	**$ 2,418,779**	**$ 2,705,525**	**$ 2,629,033**	**$ 2,892,500**	**$ 2,533,594**	**$ 2,825,612**

Option 1 - Net Present Value Profile

12/399 NPV of Project - **$38,552,406**

Option 2: 15 Car/399 Passenger Financial Projection[8]

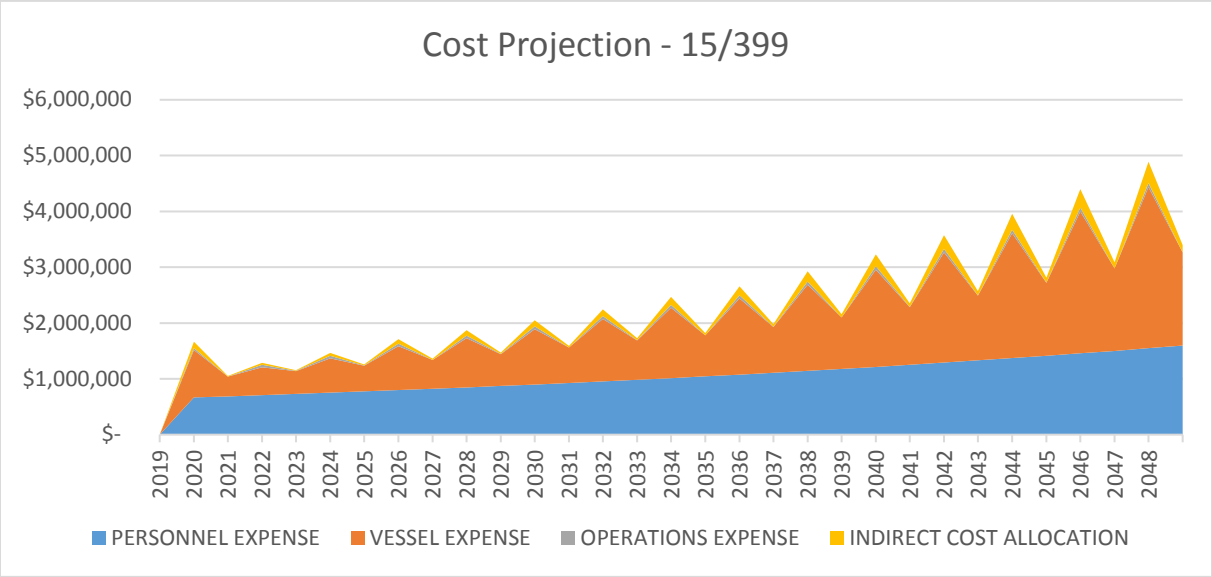


Revenue – selected data

1. REVENUES:								
		2020	***2025***	***2030***	***2035***	***2040***	***2045***	***2048***
	PASSENGER - PEAKS	$ 1,903,661	$ 2,079,976	$ 2,256,291	$ 2,432,606	$ 2,608,921	$ 2,785,236	$ 2,891,025
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,335,746**	**$ 3,776,540**	**$ 4,217,333**	**$ 4,658,126**	**$ 5,098,920**	**$ 5,539,713**	**$ 5,804,189**

[8]Assumptions:
Crew hours worked are estimated and multiplied by projected MMA negotiated wages. Crewing identical to 12/399.
Assume Raises, Diving and Oil Changes are same as 12/399
Assume drydock is 19% increase - 119K, second 160K, third, 260K, then 15% increase biannually, per EBDG data.
Painting is assumed to be 10% of drydock and is cost effected as dictated by EBDG- 5% decrease.
Assume 5% fuel price increase, quantity as defined by EBDG.
Assume 10% annual increase in maintenance after year 4.
Assume insurance 5.40% increase for 15/399 over 12/399.
Barge service, and crowd control requirement will increase at half rate of capacity trips – 4.27%
Crowd Control will take 2 people, 8 hours, 4 days per week in summer, to start, and will grow to include staff on Peaks Island Side, over the forecast.

Cost Projection



Cost – Selected Data

Personnel

		2020	2025	2030	2035	2040	2045	2048
5. EXPENSE: PERSONNEL PEAKS SERVICE								
	SR CAPTAINS - REGULAR	177,382	205,635	238,387	276,356	320,372	371,399	405,838
	SR CAPTAINS - OVERTIME	46,954	54,433	63,102	73,153	84,804	98,312	107,428
	MATE - REGULAR	121,454	140,799	163,224	189,222	219,360	254,298	277,878
	MATE - OVERTIME	32,150	37,270	43,206	50,088	58,066	67,314	73,556
	UNION DECKHANDS - REGULAR	169,740	196,776	228,117	264,450	306,570	355,399	388,354
	UNION DECKHANDS - OVERTIME	44,931	52,088	60,384	70,001	81,151	94,076	102,799
	NONUNION DH - REGULAR	41,321	47,902	55,532	64,376	74,630	86,516	94,539
	CREWS	**$ 633,933**	**$ 734,902**	**$ 851,953**	**$ 987,647**	**$ 1,144,953**	**$ 1,327,314**	**$ 1,450,392**
	CROWD CONTROL HOURS	400	490	601	737	904	1,108	1,252
	TICKET OFFICE - REGULAR	$ 4,495	$ 6,388	$ 9,080	$ 12,905	$ 18,342	$ 26,070	$ 32,193
	TICKET OFFICE	**$ 4,495**	**$ 6,388**	**$ 9,080**	**$ 12,905**	**$ 18,342**	**$ 26,070**	**$ 32,193**
	FICA	**$ 48,840**	**$ 56,709**	**$ 65,869**	**$ 76,542**	**$ 88,992**	**$ 103,534**	**$ 113,418**
PERSONNEL EXPENSE		**$ 687,267**	**$ 797,999**	**$ 926,901**	**$ 1,077,094**	**$ 1,252,288**	**$ 1,456,919**	**$ 1,596,003**

Vessel

		2020	2025	2030	2035	2040	2045	2048
6. EXPENSE: VESSEL PEAKS SERVICE								
	GENERAL REPAIR	$ 12,008	$ 58,120	$ 93,603	$ 150,748	$ 242,781	$ 391,002	$ 520,423
	DRYDOCK	$ -	$ 297,500	$ -	$ 585,483	$ -	$ 1,152,237	$ -
	DIVING	$ 16,571	$ 19,210	$ 22,270	$ 25,817	$ 29,928	$ 34,695	$ 37,912
	OIL CHANGE	$ 18,961	$ 24,199	$ 30,885	$ 39,418	$ 50,309	$ 64,208	$ 74,329
	MACHIGONNE	**$ 47,540**	**$ 399,029**	**$ 146,758**	**$ 801,466**	**$ 323,019**	**$ 1,642,142**	**$ 632,665**
	Gallons Used	108,164	108,164	108,164	108,164	108,164	108,164	108,164
		$ 2.50	$ 3.19	$ 4.07	$ 5.20	$ 6.63	$ 8.46	$ 9.80
Fuel		$ 270,301	$ 344,980	$ 440,292	$ 561,936	$ 717,189	$ 915,334	$ 1,059,614
Insurance Boat		$ 43,426	$ 50,343	$ 58,361	$ 67,657	$ 78,433	$ 90,925	$ 99,356
VESSEL EXPENSE		**$ 361,267**	**$ 794,352**	**$ 645,410**	**$ 1,431,059**	**$ 1,118,640**	**$ 2,648,402**	**$ 1,791,635**

Operations

	2020	2025	2030	2035	2040	2045	2048
7. EXPENSE: OPERATIONS PEAKS SERVICE							
Barge Subcontracting	$ 1,900	$ 45,567	$ 2,329	$ 55,867	$ 2,856	$ 68,495	$ 3,362
OPERATIONS EXPENSE	**$ 1,900**	**$ 45,567**	**$ 2,329**	**$ 55,867**	**$ 2,856**	**$ 68,495**	**$ 3,362**

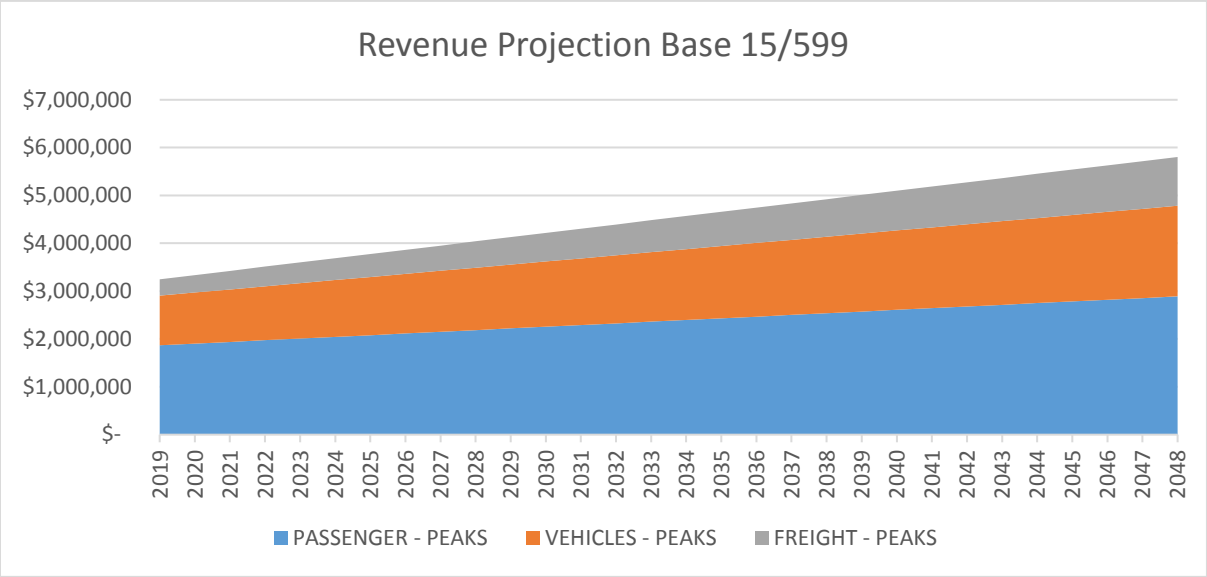
Contribution

	2020	2025	2030	2035	2040	2045	2048
INDIRECT COST ALLOCATION	$ 9,603	$ 80,604	$ 29,645	$ 161,896	$ 65,250	$ 331,713	$ 127,798
TOTAL EXPENSE PEAKS SERVICE	**$ 1,060,037**	**$ 1,718,522**	**$ 1,604,286**	**$ 2,725,916**	**$ 2,439,033**	**$ 4,505,529**	**$ 3,518,799**
NET OPERATING CONTRIBUTION	**$ 2,275,709**	**$ 2,058,018**	**$ 2,613,047**	**$ 1,932,210**	**$ 2,659,886**	**$ 1,034,184**	**$ 2,285,391**
TOTAL FTA PM GRANT REVENUE	$ 45,714	$ 383,707	$ 141,122	$ 770,690	$ 310,615	$ 1,579,084	$ 608,371
NET CONTRIBUTION	**$ 2,321,423**	**$ 2,441,724**	**$ 2,754,169**	**$ 2,702,900**	**$ 2,970,501**	**$ 2,613,269**	**$ 2,893,761**

Net Present Value Profile

15/399 NPV of Project - **$39,319,640**

Option 3: 15 Car/599 Passenger Financial Projection[9]

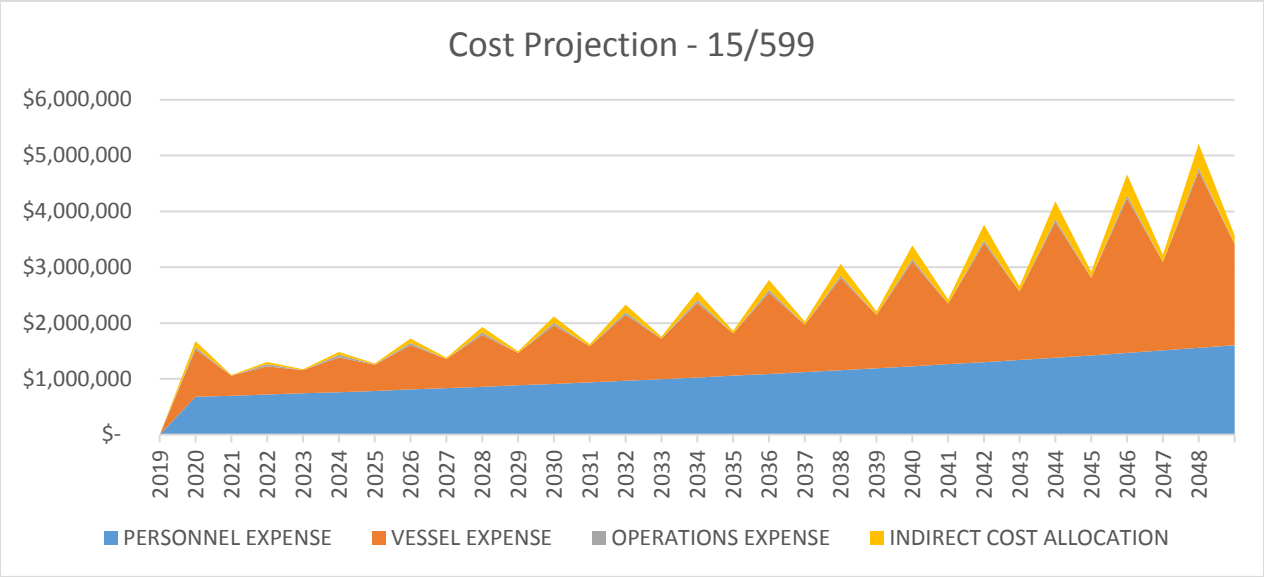


Revenue – selected data

1. REVENUES:								
		2020	***2025***	***2030***	***2035***	***2040***	***2045***	***2048***
	PASSENGER - PEAKS	$ 1,903,661	$ 2,079,976	$ 2,256,291	$ 2,432,606	$ 2,608,921	$ 2,785,236	$ 2,891,025
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,335,746**	**$ 3,776,540**	**$ 4,217,333**	**$ 4,658,126**	**$ 5,098,920**	**$ 5,539,713**	**$ 5,804,189**

[9] Assumptions
Remove 2% for Added Trips due to increased pass capacity.
Crewing – must add 2 deckhands to 15/399, during summer schedule only. Will use summer/seasonal to fill these roles. Add 2664 hours annually for summer schedule.
Assume Raises, Diving and Oil Changes are same as 12/399
Assume first drydock is 19% increase from 12/399 - 119K, second 160K, third, 260K, then 15% increase every drydock.
Painting is assumed to be 10% of drydock and is cost effected as dictated by EBDG, with additional superstructure from 15/399. This painting amount will increase 20% from the 15/399.
Assume 5% fuel price increase, quantity as defined by EBDG.
Assume 11% annual increase in Maintenance after year 4.
Assume insurance is 8.70% increase for 15/599 over 12/399.
Barge service requirement, and crowd control requirement will increase at– 2.13%, vehicle growth rate.
Crowd Control will take 1 person, 6 hours, 3 days per week in summer, and level out (max) at 1500 hours.

Cost Projection



Cost – Selected Data

Personnel

		2020	2025	2030	2035	2040	2045	2048
5. EXPENSE: PERSONNEL PEAKS SERVICE								
	SR CAPTAINS - REGULAR	172,216	199,645	231,444	268,307	311,041	360,582	394,018
	SR CAPTAINS - OVERTIME	45,587	52,847	61,265	71,022	82,334	95,448	104,299
	MATE - REGULAR	117,917	136,698	158,470	183,710	212,971	246,891	269,785
	MATE - OVERTIME	31,213	36,185	41,948	48,629	56,375	65,354	71,414
	UNION DECKHANDS - REGULAR	164,796	191,044	221,473	256,748	297,641	345,047	377,042
	UNION DECKHANDS - OVERTIME	43,623	50,571	58,625	67,963	78,787	91,336	99,805
	NONUNION DH - REGULAR	70,053	81,211	94,146	109,141	126,524	146,676	160,277
	CREWS	**$ 645,405**	**$ 748,201**	**$ 867,370**	**$ 1,005,520**	**$ 1,165,673**	**$ 1,351,334**	**$ 1,476,640**
	CROWD CONTROL HOURS	221	246	274	305	340	378	404
	TICKET OFFICE - REGULAR	$ 2,480	$ 3,203	$ 4,135	$ 5,340	$ 6,895	$ 8,903	$ 10,379
	TICKET OFFICE	**$ 2,480**	**$ 3,203**	**$ 4,135**	**$ 5,340**	**$ 6,895**	**$ 8,903**	**$ 10,379**
	FICA	**$ 49,563**	**$ 57,482**	**$ 66,670**	**$ 77,331**	**$ 89,701**	**$ 104,058**	**$ 113,757**
PERSONNEL EXPENSE		**$ 697,448**	**$ 808,886**	**$ 938,176**	**$ 1,088,190**	**$ 1,262,270**	**$ 1,464,296**	**$ 1,600,776**

Vessel

		2020	2025	2030	2035	2040	2045	2048
6. EXPENSE: VESSEL PEAKS SERVICE								
	GENERAL REPAIR	$ 12,008	$ 59,181	$ 99,724	$ 168,041	$ 283,159	$ 477,139	$ 652,551
	DRYDOCK	$ -	$ 297,500	$ -	$ 652,236	$ -	$ 1,283,608	$ -
	DIVING	$ 16,571	$ 19,210	$ 22,270	$ 25,817	$ 29,928	$ 34,695	$ 37,912
	OIL CHANGE	$ 18,961	$ 24,199	$ 30,885	$ 39,418	$ 50,309	$ 64,208	$ 74,329
	MACHIGONNE	**$ 47,540**	**$ 400,091**	**$ 152,879**	**$ 885,512**	**$ 363,396**	**$ 1,859,651**	**$ 764,792**
	Gallons Used	109,479	109,479	109,479	109,479	109,479	109,479	109,479
		$ 2.50	$ 3.19	$ 4.07	$ 5.20	$ 6.63	$ 8.46	$ 9.80
Fuel		$ 273,587	$ 349,174	$ 445,645	$ 568,768	$ 725,908	$ 926,463	$ 1,072,497
Insurance Boat		$ 44,773	$ 51,904	$ 60,171	$ 69,755	$ 80,865	$ 93,745	$ 102,438
VESSEL EXPENSE		**$ 365,900**	**$ 801,169**	**$ 658,695**	**$ 1,524,035**	**$ 1,170,170**	**$ 2,879,859**	**$ 1,939,727**

Operations

	2020	2025	2030	2035	2040	2045	2048
7. EXPENSE: OPERATIONS PEAKS SERVICE							
Barge Subcontracting	$ 1,900	$ 43,851	$ 2,116	$ 48,844	$ 2,357	$ 54,405	$ 2,570
OPERATIONS EXPENSE	**$ 1,900**	**$ 43,851**	**$ 2,116**	**$ 48,844**	**$ 2,357**	**$ 54,405**	**$ 2,570**

Contribution

	2020	2025	2030	2035	2040	2045	2048
INDIRECT COST ALLOCATION	$ 9,603	$ 80,818	$ 30,882	$ 178,873	$ 73,406	$ 375,649	$ 154,488
TOTAL EXPENSE PEAKS SERVICE	**$ 1,074,851**	**$ 1,734,725**	**$ 1,629,869**	**$ 2,839,943**	**$ 2,508,203**	**$ 4,774,210**	**$ 3,697,560**
NET OPERATING CONTRIBUTION	**$ 2,260,895**	**$ 2,041,815**	**$ 2,587,464**	**$ 1,818,183**	**$ 2,590,717**	**$ 765,503**	**$ 2,106,629**
TOTAL FTA PM GRANT REVENUE	$ 45,714	$ 384,727	$ 147,009	$ 851,509	$ 349,442	$ 1,788,240	$ 735,424
NET CONTRIBUTION	**$ 2,306,609**	**$ 2,426,542**	**$ 2,734,473**	**$ 2,669,692**	**$ 2,940,159**	**$ 2,553,744**	**$ 2,842,053**

Net Present Value Profile

15/599 NPV of Project - **$39,016,492**

Assumptions:

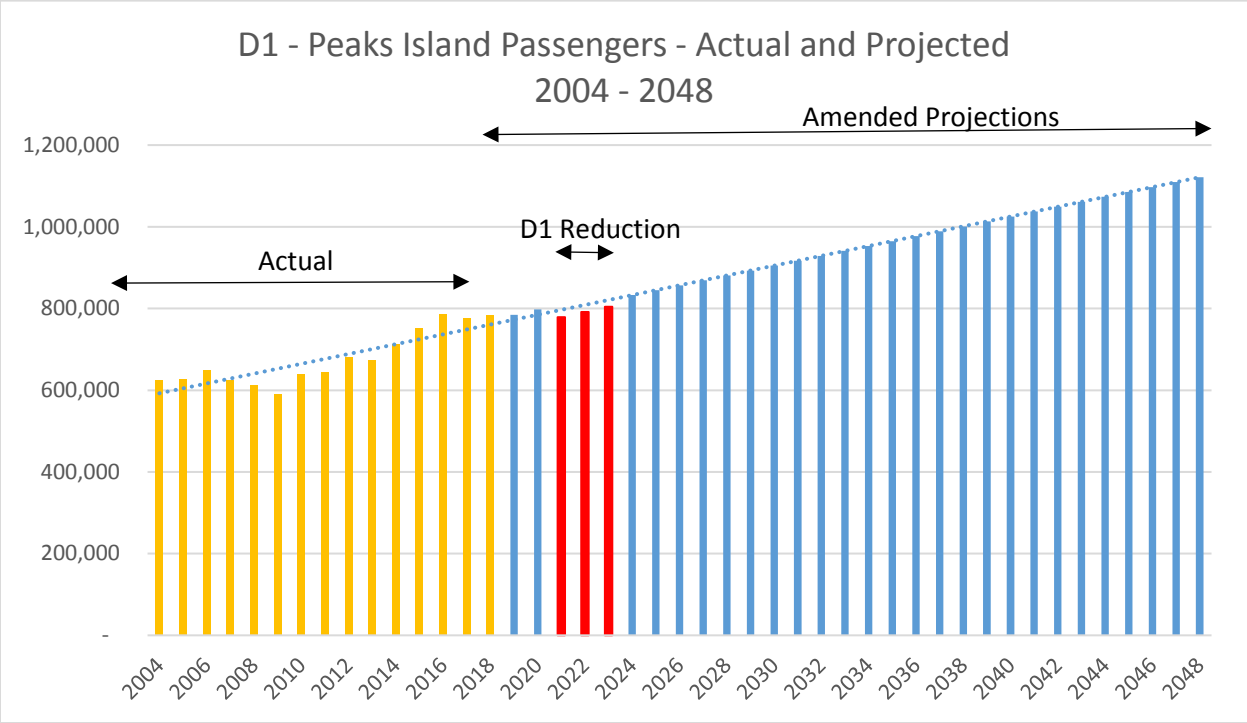
NPV Comparison

Option	Description	Net Present Value
1	12/399	$ 38,552,406
2	15/399	$ 39,319,640
3	15/599	$ 39,016,492

Considering that the financial projections are 30 years, until 2048, the NPV calculations for each of the three vessels is extremely close. Projected values, in today's dollars, are within 2%, well within the margin for error. It can be assumed that the "driver" for this similar financial performance are the assumptions provided by Elliott Bay Design Group that dictate how cost profiles are to be projected into the future. The analysis will continue with various scenario testing to determine if the cost profiles, or overall financial performance change with shocks to the economics of CBITD service or to policies that may impact the District.

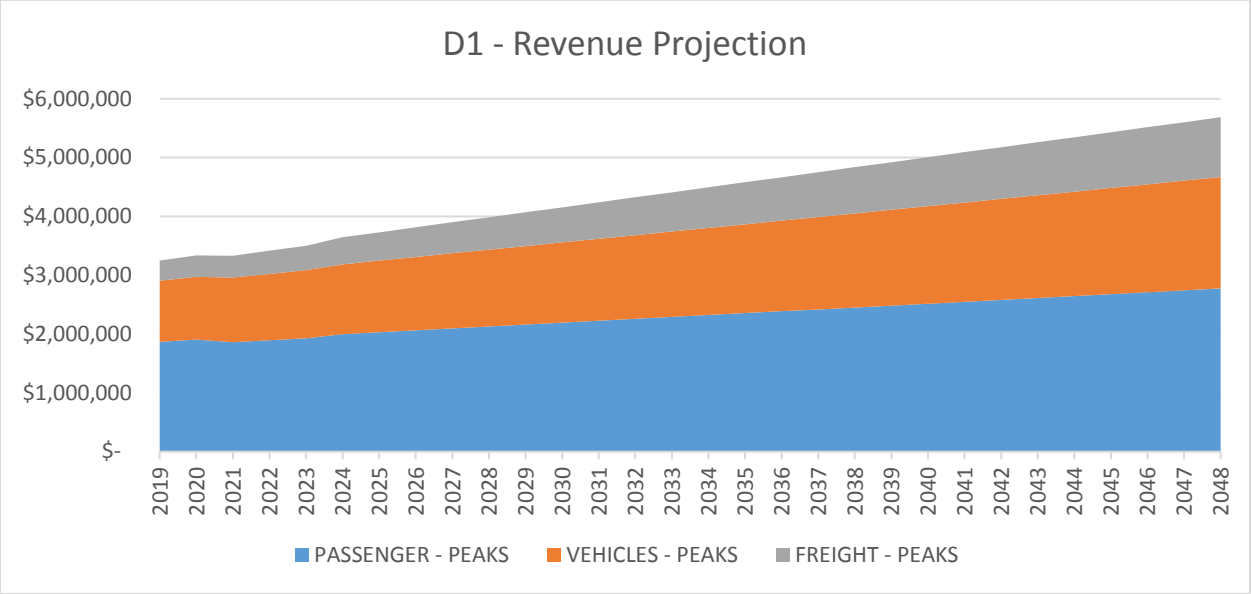
Testing

Downward Test #1 – 4% decrease in Peaks Ridership, due to recession, over a three year period 2021-2023. The forward looking model already assumes a recession, as the 2008 to 2010 period was included in the data set, however, in this example we will add the complication of a deep recession as noted in the testing rubric. This example is indicative of a downturn that is much deeper than the 2008-2009 recession where CBITD experienced -2.3% and -3.4% subsequent annual decreases. In this case we are assuming a 4% decrease from projection over 3 years.



Revenue Result

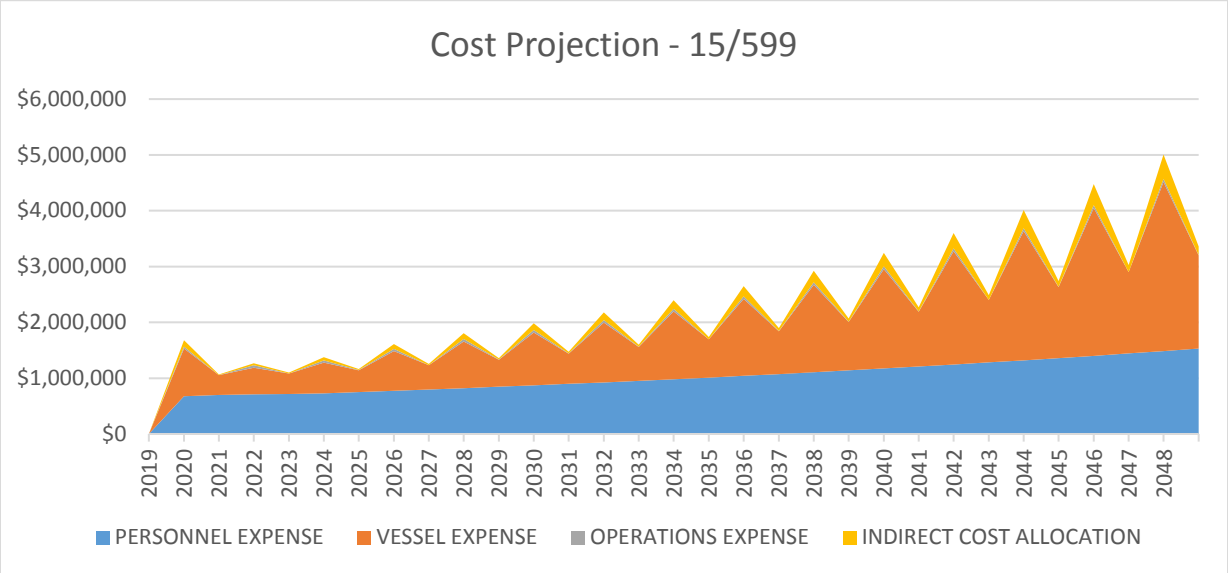
This decrease in ridership would reduce Peaks Island Passenger Revenue by $78K, $79K and $80K in 2021, 2022 and 2023 respectively, costing the District overall $237K in lost revenue. The recessionary impact for 3 years also adjusts the long term forward looking forecast downward, as you can see from the chart. In addition to passenger revenue decreases, in the D1 test, freight revenue decreases were also assumed, declining at the same rate as passenger revenues, 4%.



Revenue – Selected Data

1. REVENUES:								
		2020	*2025*	*2030*	*2035*	*2040*	*2045*	*2048*
	PASSENGER - PEAKS	$ 1,903,661	$ 2,033,259	$ 2,194,412	$ 2,355,566	$ 2,516,719	$ 2,677,873	$ 2,774,565
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,335,746**	**$ 3,729,823**	**$ 4,155,455**	**$ 4,581,086**	**$ 5,006,718**	**$ 5,432,350**	**$ 5,687,729**

Cost Projection 15/599



In the D1 test, cost impacts are assumed to be a 4% decrease in fuel prices, for 3 years, as fuel price declines are typical of recessionary periods. [10] Other cost impacts include a reduction in negotiated raises for MMA from 3% annually to 1.5% annually, at the end of the recession.

NPV Analysis

Option	Description	+/-	NPV Impact
1	12/399	+	$ 1,037,322
2	15/399	+	$ 1,146,286
3	15/599	+	$ 1,174,043

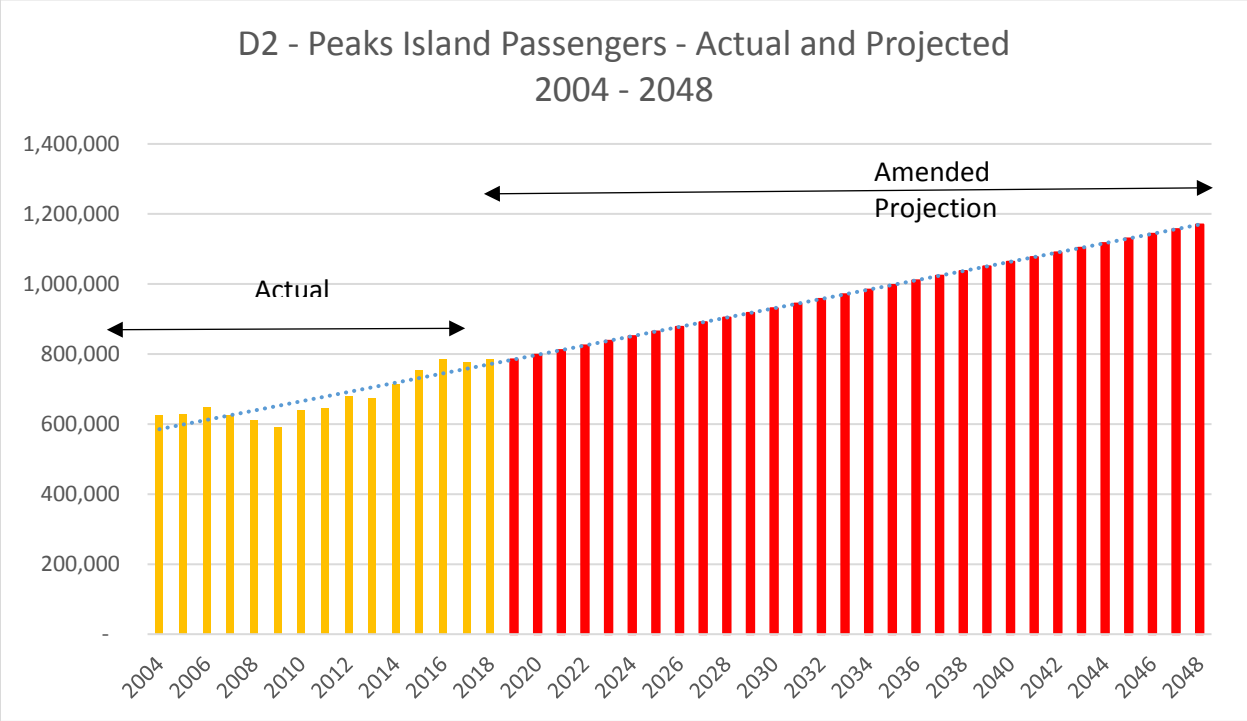
D1 Analysis –

The overall nature of the D1 Test is a huge impact on revenues and on the two largest cost components of CBITD operation, fuel cost and personnel cost, at least as far as this model. As a result of declining costs, this downward test actually increases the net present value of all three vessel designs, as recessionary impacts will decrease critical costs comparatively. It's clear that fuel cost is an enormous driver of costs at CBITD and shocks to pricing, whether up or down, have impacts that are amplified to outweigh any variation in revenues.

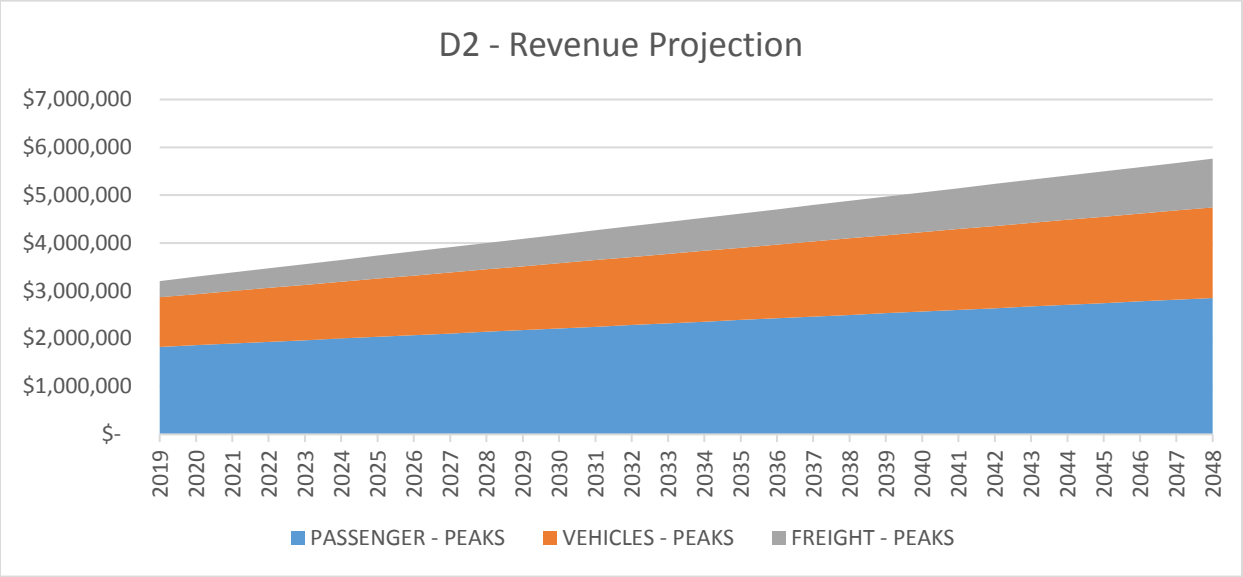
All 3 vessels impacted substantially equally by revenue and cost decreases, however, the larger hull vessels are slightly beneficial by a marginal factor.

[10] This assumption was discussed with Joe Cote, C.F.O. of Dennis K Burke Oil, and verified as an accurate assumption.

Downward Test #2 - Wedding changes - 70 weddings of 100 passengers each, riding Bay Mist, not normal service. As a result, ticket revenue would reclassify into Charter Revenue, however, additional costs would be incurred to transport these passengers, through fuel and wages. Charter costs are not separately stated, currently, so they appear in financial statements commingled with costs from scheduled service.



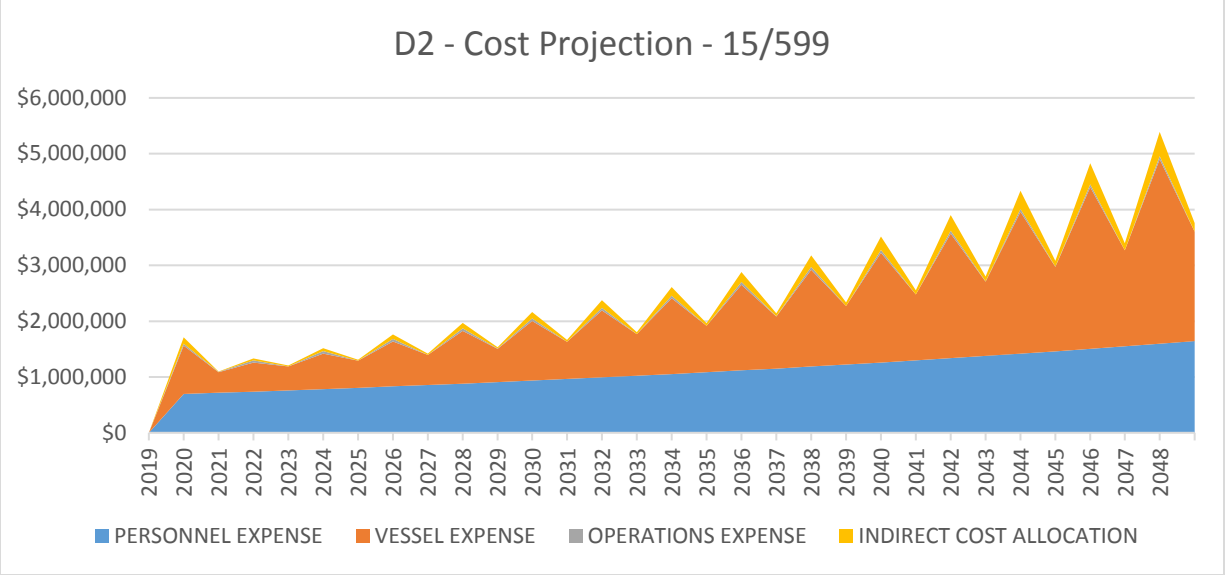
Revenue Impact



Revenue – Selected Data

1. REVENUES:								
		2020	2025	2030	2035	2040	2045	2048
	PASSENGER - PEAKS	$ 1,862,554	$ 2,038,869	$ 2,215,184	$ 2,391,499	$ 2,567,814	$ 2,744,129	$ 2,849,918
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,294,640**	**$ 3,735,433**	**$ 4,176,226**	**$ 4,617,020**	**$ 5,057,813**	**$ 5,498,607**	**$ 5,763,083**

Cost Projection 15/599



In the D2 test, cost impacts are assumed to be an increase in fuel consumed, as Bay Mist would need to run to Peaks Island, assumed to be 35 times in July and 35 times in August. Fuel costs have been modified assuming 30 gallons burned per trip. Additionally, crew hours have been impacted sharply, as Bay Mist wedding service would require additional crew in the form of 1 captain and 2 deckhands, who according to CBA require 4 hour minimum call-ins.

NPV Analysis

Option	Description	+/-	NPV Impact
1	12/399	-	$ 1,087,452
2	15/399	-	$ 1,087,452
3	15/599	-	$ 1,087,452

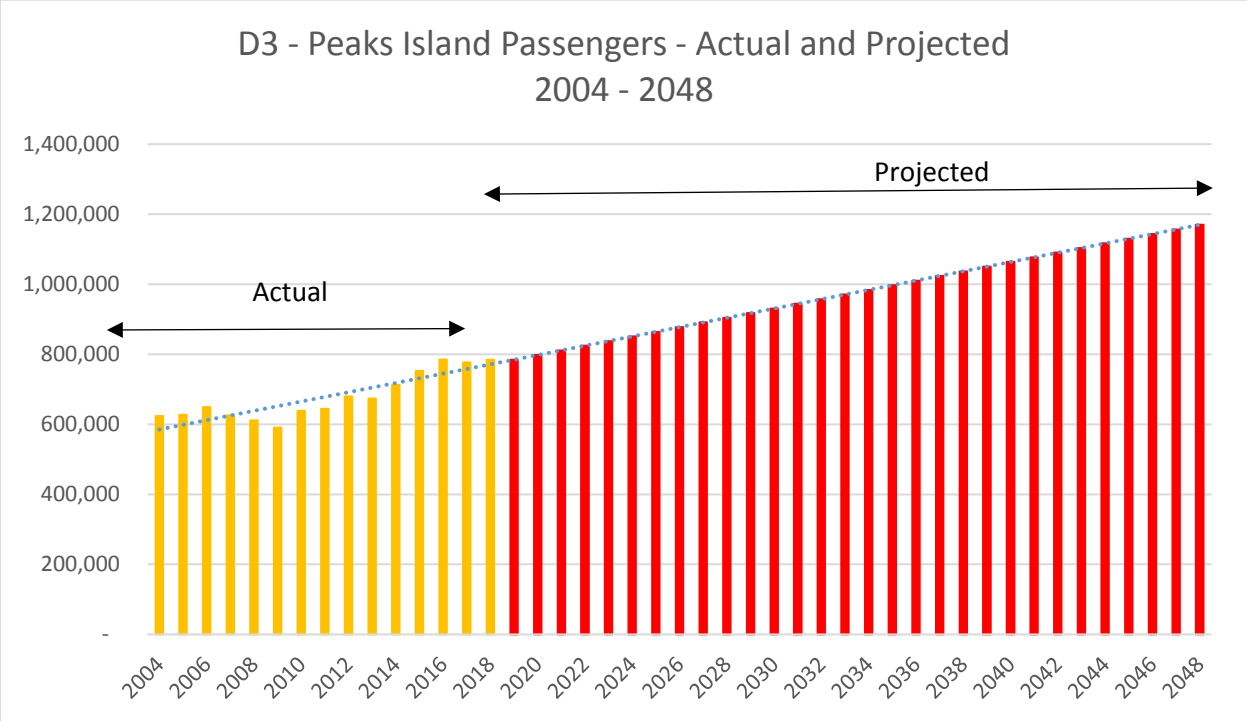
D2 Analysis –

The D2 Test has little impact on revenues, but significant impact on costs. The fact that all three NPVs are equally impacted signify that this is the added, time corrected, cost for the additional Bay Mist service, primarily consisting of fuel and crew time. For this analysis, any additional maintenance

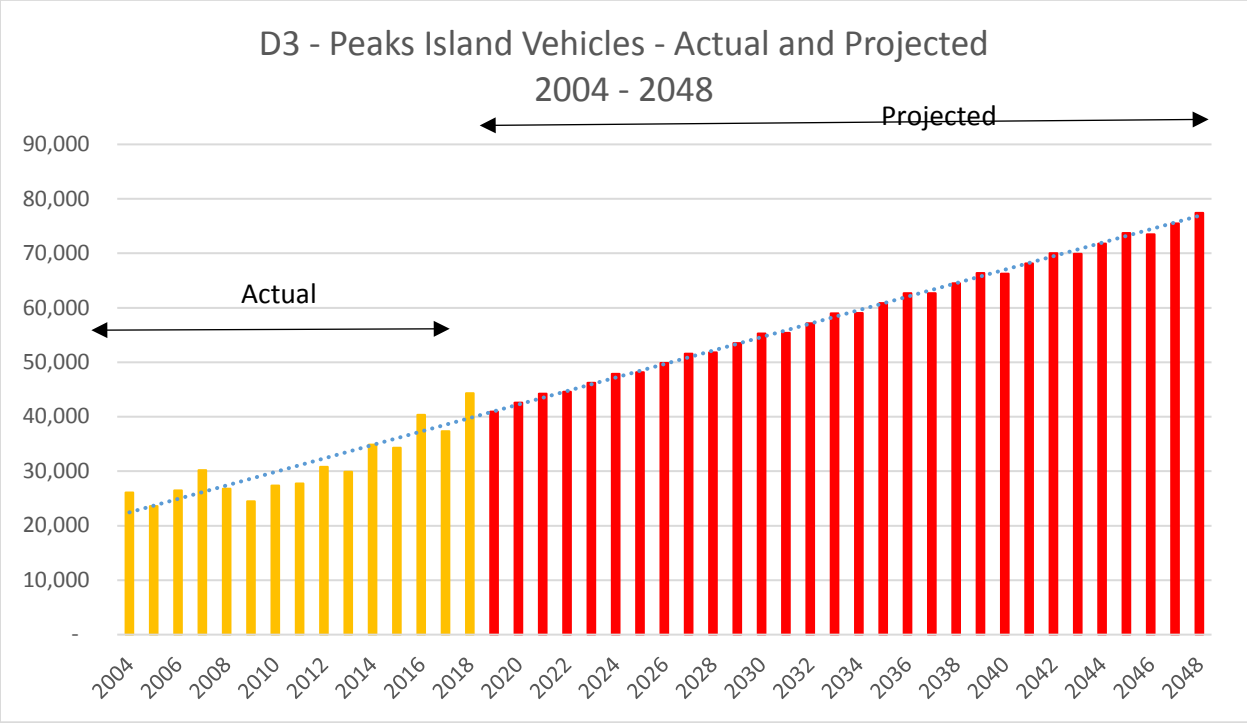
necessary from added service hours on the Bay Mist have been ignored. Again, this scenario speaks to the two largest cost components of CBITD operation, fuel cost and personnel cost. It's clear that this would be a very expensive solution for transporting 7,000 passengers per summer.

All 3 vessels impacted equally due to Bay Mist considerations.

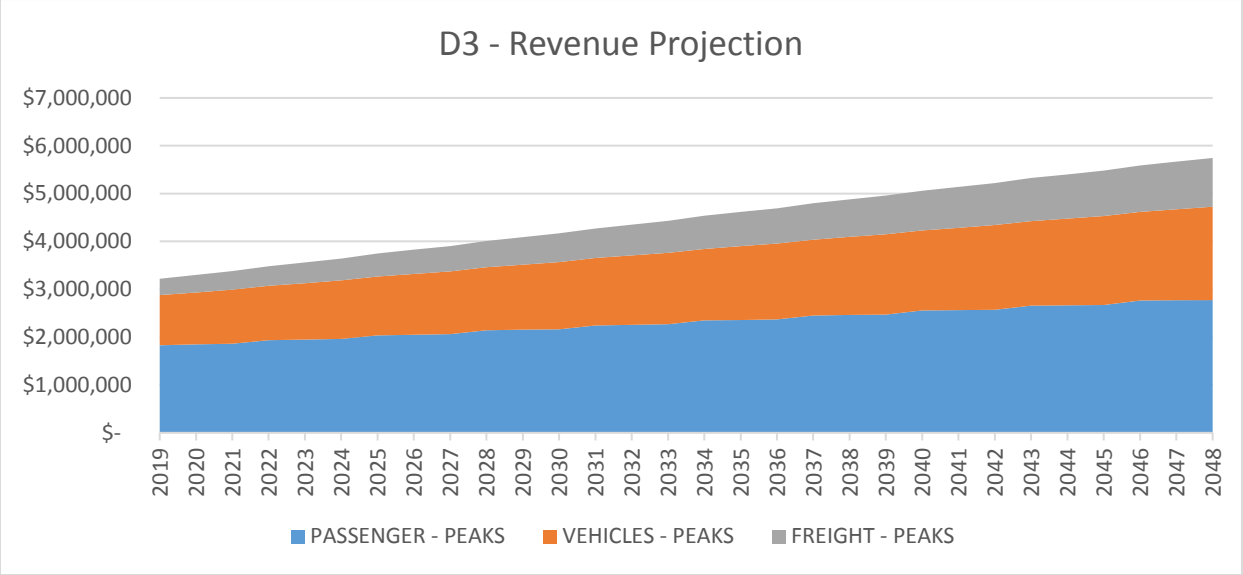
Downward Test #3 – Parking issues in Portland and ridership declines as a result of a lack of reasonably priced parking hear the ferry. Ridership decreases by 2%, 3%, 4% indefinitely.



While ridership may decrease due to a lack of reasonably priced parking in town, it is assumed that vehicles traffic will increase with the aforementioned complication. With free parking available on Peaks, and high cost of parking in town, more visitors may opt to take cars to the island. As a result, vehicle traffic has been adjusted upwards, by factors of 1%, 2% and 3%.



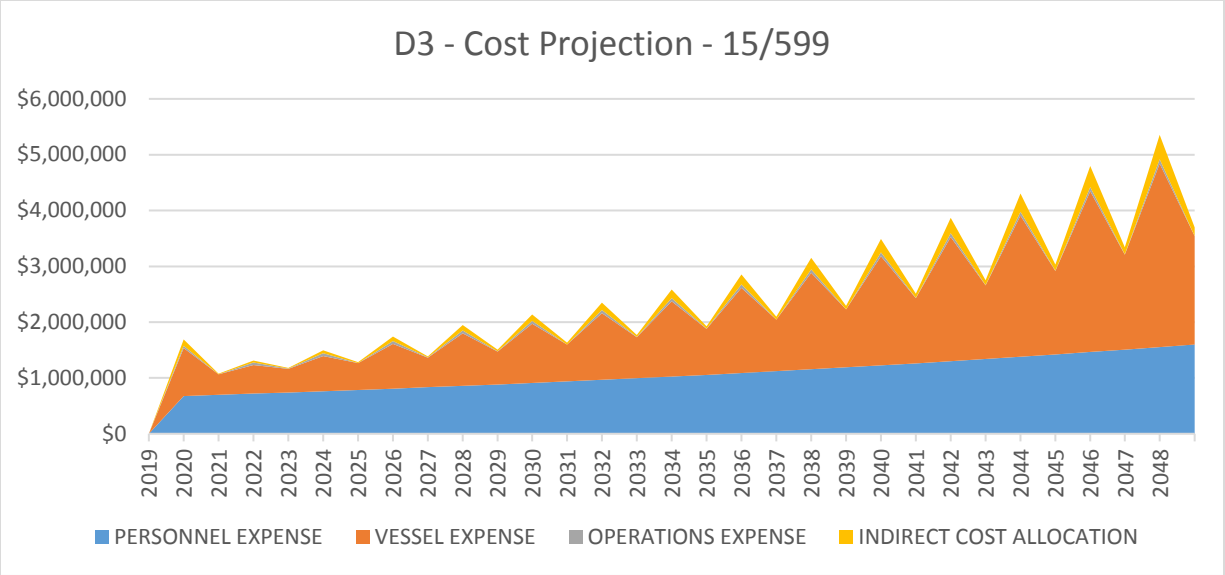
Revenue Impact



Revenue – Selected Data

1. REVENUES:								
		2020	2025	2030	2035	2040	2045	2048
	PASSENGER - PEAKS	$ 1,846,551	$ 2,038,376	$ 2,166,039	$ 2,359,628	$ 2,556,742	$ 2,673,827	$ 2,775,384
	VEHICLES - PEAKS	$ 1,089,543	$ 1,227,930	$ 1,404,266	$ 1,541,177	$ 1,675,136	$ 1,860,328	$ 1,951,541
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,300,000**	**$ 3,747,098**	**$ 4,167,982**	**$ 4,615,367**	**$ 5,063,327**	**$ 5,482,488**	**$ 5,745,389**

Cost Projection 15/599



In the D3 test, passenger revenue decreases are not quite covered by vehicle ticket increases, so the net result is decreased revenues. There are cost impacts assumed as well, namely in wages and operations expense through additional necessary crowd control staffing and supplemental barge service for additional vehicle needs by way of Lionel Plante Associates.

NPV Analysis

Option	Description	+/-	NPV Impact
1	12/399	-	$ 706,445
2	15/399	-	$ 619,855
3	15/599	-	$ 654,112

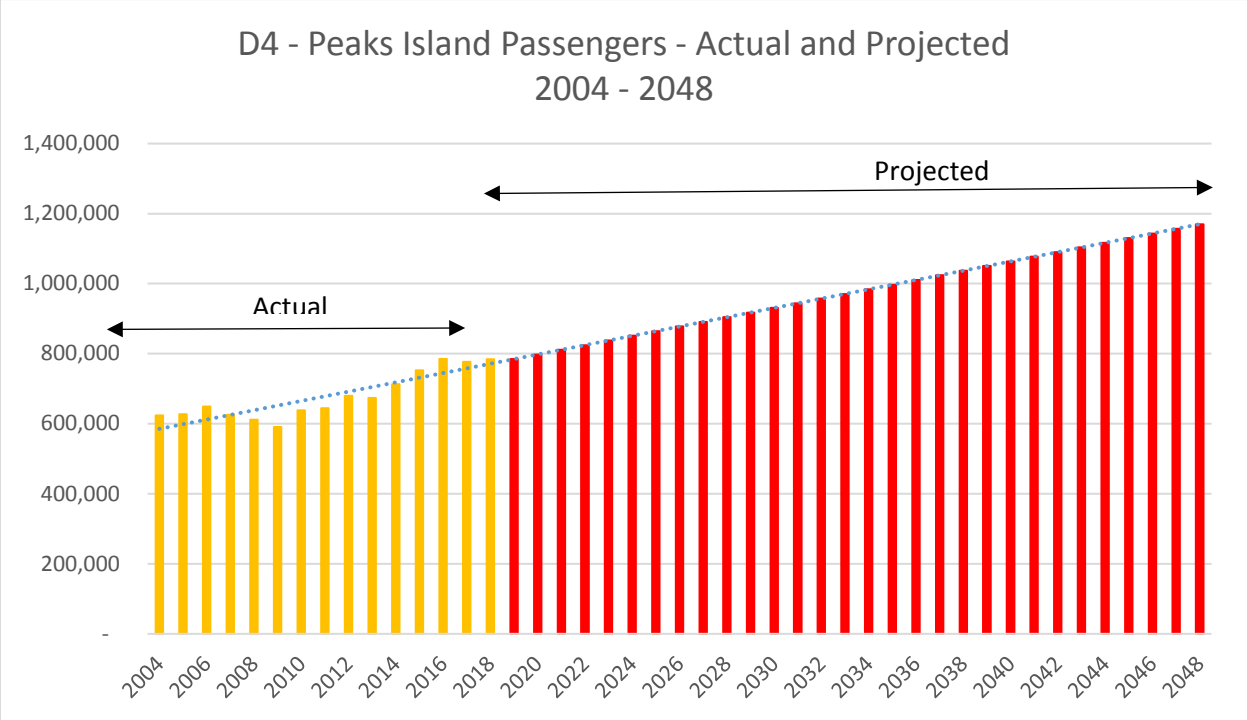
D3 Analysis –

The D3 Test has marginal impact on revenues, due to the conflicting nature of decreasing passenger traffic and increasing vehicle traffic. Costs are largely similar for the three vessels, however the added burden of additional vehicle traffic is challenging for the vessel with vehicle deck capacity of 12. Clearly,

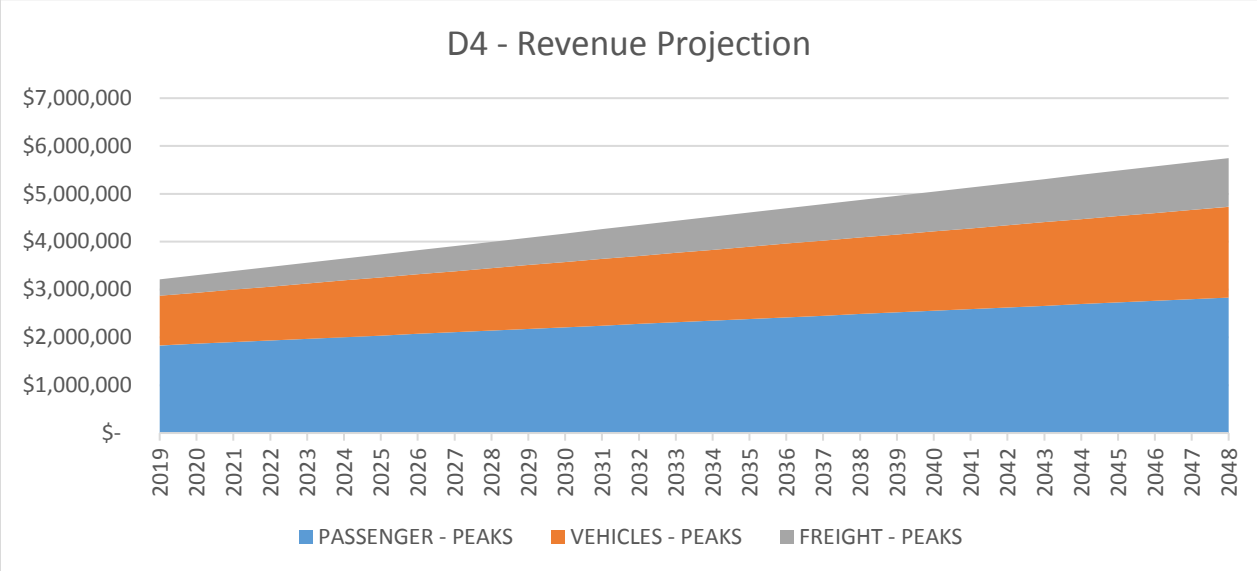
the 15 car capacity decks would fare better in this scenario due to a decrease in the need for supplementary barge service and for crowd control, as vehicle lines clear up quicker.

All 3 vessels impacted substantially equally however, vessels with 15 car decks have a clear benefit.

Downward Test #4 – Golf cart rules passed prohibiting rentals <4 hours, leads to decreased tourism, frustrated tourists do not visit Peaks, 2% decrease, straight line.



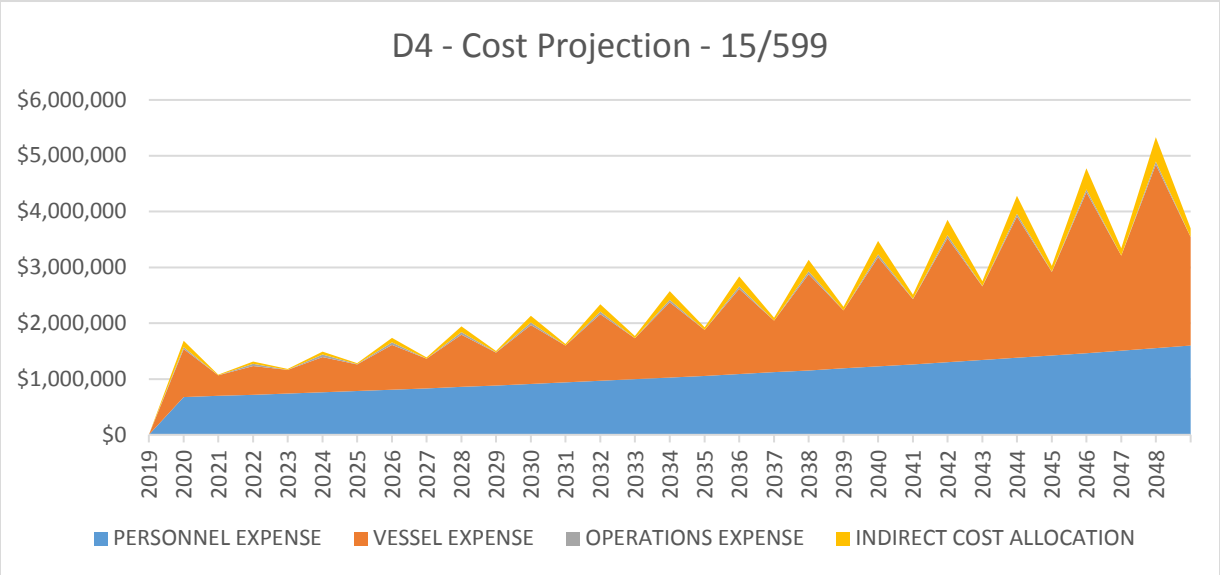
Revenue Impact



Revenue – Selected Data

1. REVENUES:								
		2020	*2025*	*2030*	*2035*	*2040*	*2045*	*2048*
	PASSENGER - PEAKS	$ 1,865,587	$ 2,038,376	$ 2,211,165	$ 2,383,954	$ 2,556,742	$ 2,729,531	$ 2,833,205
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,297,673**	**$ 3,734,940**	**$ 4,172,207**	**$ 4,609,474**	**$ 5,046,741**	**$ 5,484,008**	**$ 5,746,369**

Cost Projection 15/599



In the D4 test, passenger revenue decreases. Ultimately, there are no other impacts to the income statement, other than decreased passenger revenue. There are no additional costs to be incurred and no impact to operating considerations

NPV Analysis

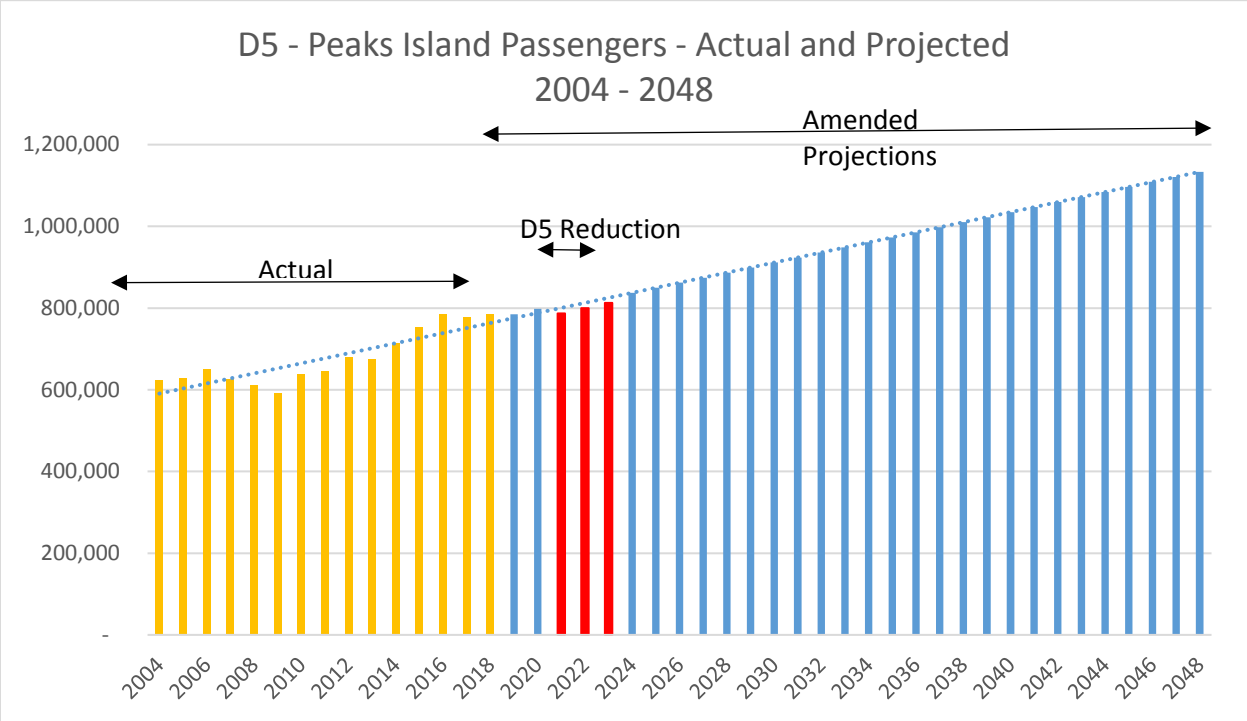
Option	Description	+/-	NPV Impact
1	12/399	-	$ 652,276
2	15/399	-	$ 652,276
3	15/599	-	$ 652,276

D4 Analysis –

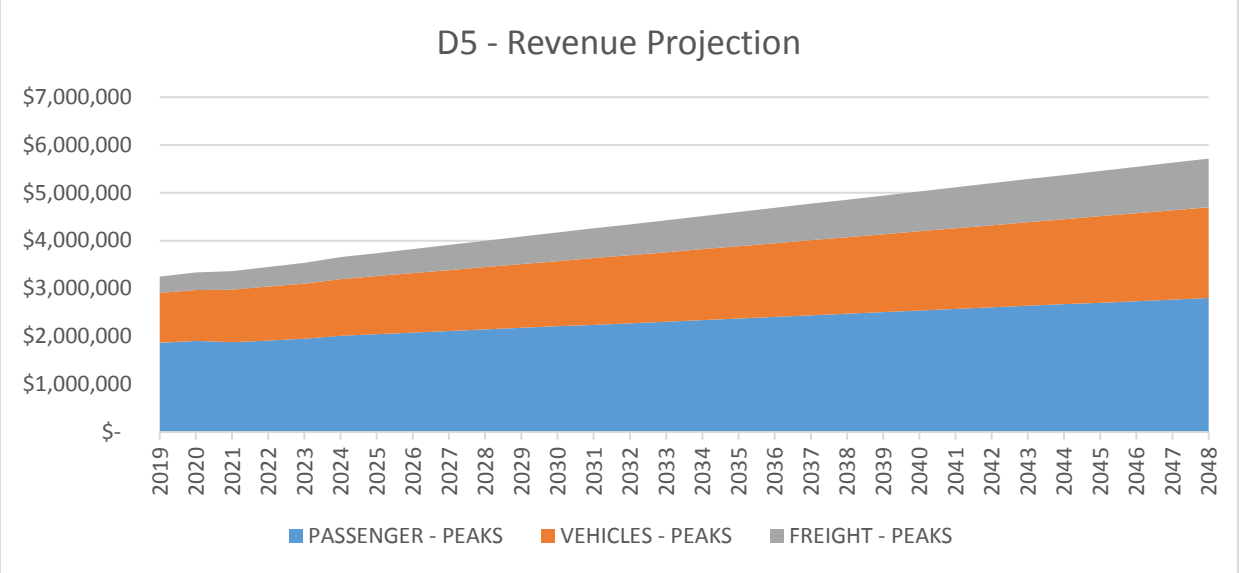
The D4 Test has an impact on revenues, due to a decrease in tourism to Peaks Island. Costs associated with each boat are from the base projection, so the only change is less revenue to offset expenses for each of the vessels.

All 3 vessels impacted equally.

Downward Test #5 – Negative impacts of overcrowded terminal and Peaks combined with ongoing Peaks Island fight on social media against larger boat, decrease passengers by 3% for 3 years.



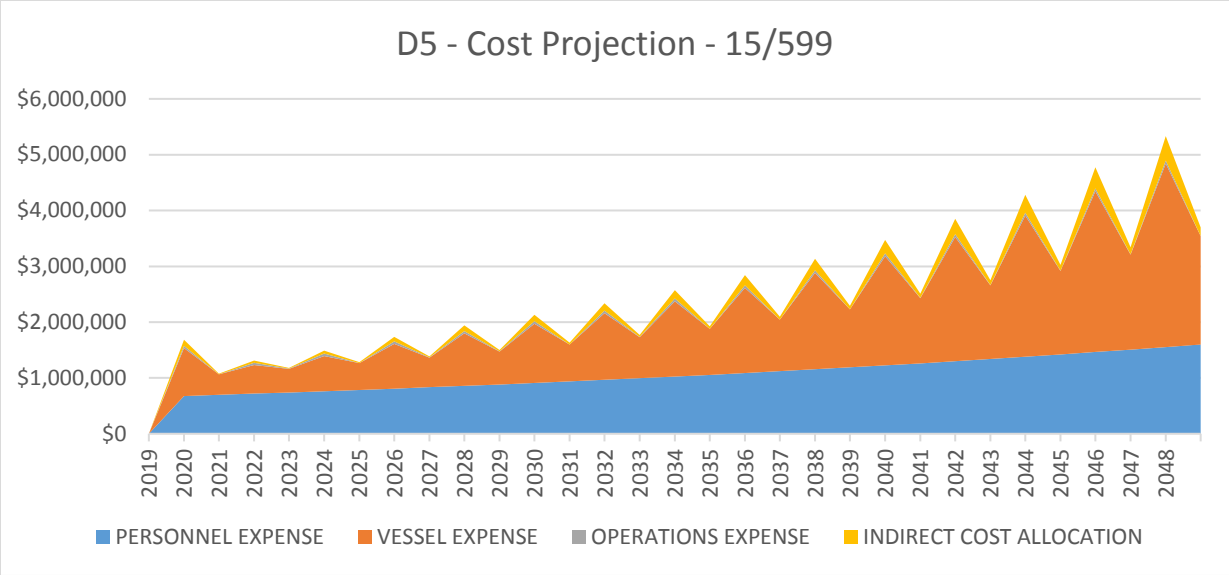
Revenue Impact



Revenue – Selected Data

1. REVENUES:								
		2020	2025	2030	2035	2040	2045	2048
	PASSENGER - PEAKS	$ 1,903,661	$ 2,044,938	$ 2,209,882	$ 2,374,826	$ 2,539,770	$ 2,704,714	$ 2,803,680
	VEHICLES - PEAKS	$ 1,068,179	$ 1,215,772	$ 1,363,365	$ 1,510,958	$ 1,658,551	$ 1,806,144	$ 1,894,700
	FREIGHT - PEAKS	$ 363,906	$ 480,791	$ 597,677	$ 714,562	$ 831,448	$ 948,333	$ 1,018,465
Total		**$ 3,335,746**	**$ 3,741,502**	**$ 4,170,924**	**$ 4,600,346**	**$ 5,029,769**	**$ 5,459,191**	**$ 5,716,844**

Cost Projection 15/599



In the D5 test, passenger revenue decreases. Ultimately, there are no other impacts to the income statement. There are no additional costs to be incurred and no impact to operating considerations

NPV Analysis

Option	Description	+/-	NPV Impact
1	12/399	-	$ 696,712
2	15/399	-	$ 696,712
3	15/599	-	$ 696,712

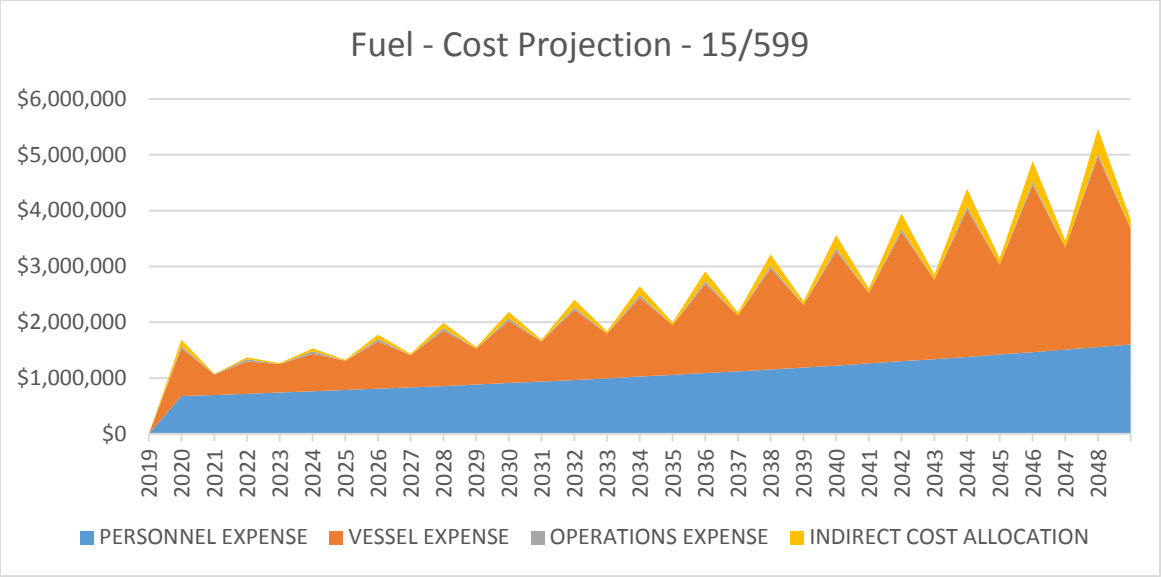
D5 Analysis –

The D5 Test has an impact on revenues, due to a decrease in tourism to Peaks Island, again. Costs associated with each boat are from the base projection, so the only change is less revenue to offset expenses for each of the vessels.

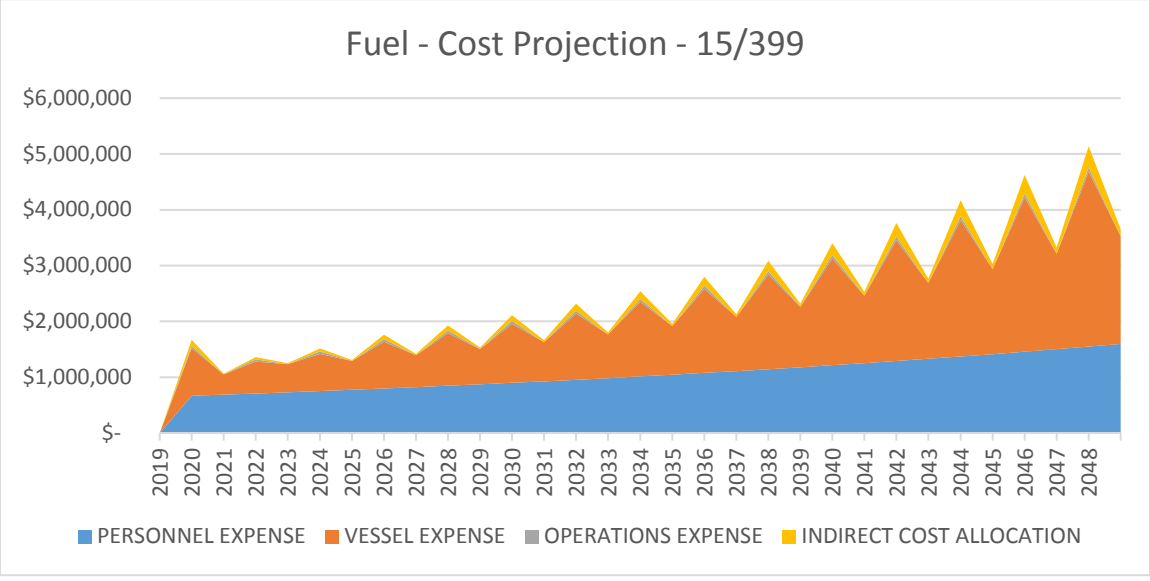
All 3 vessels impacted equally.

Fuel Shock Test – This test serves to determine how sharply increasing fuel costs would impact vessel choice. Rerun the estimated fuel costs with a spike of 28% and 11% as occurred with the wars in the Middle East. In this example, there is no revenue impact, only vessel cost.

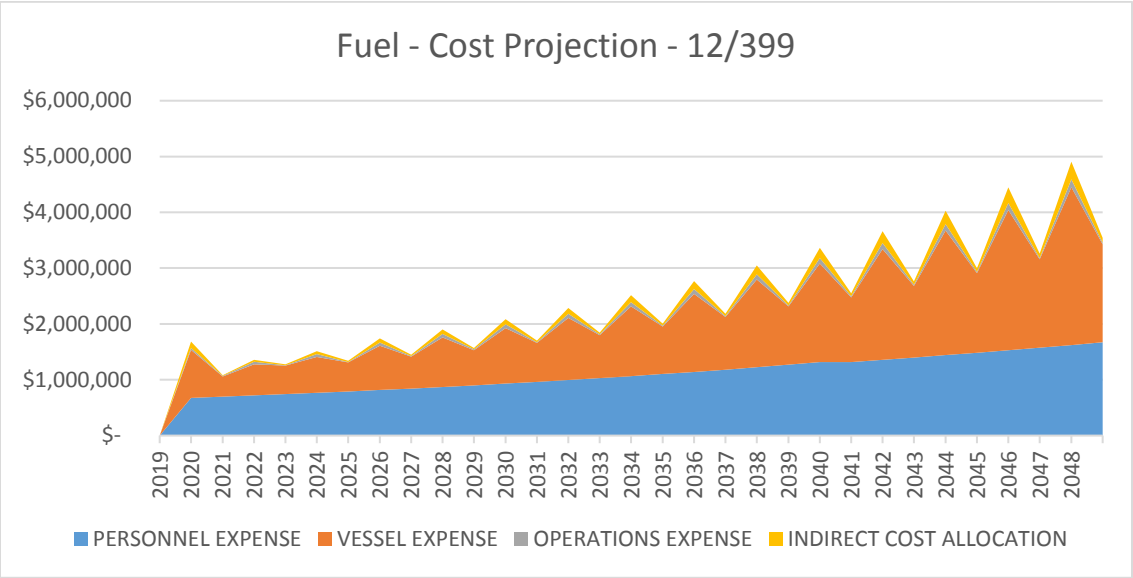
Cost Projection 15/599



Cost Projection 15/399



Cost Projection 12/399



In the fuel test, fuel cost increases from $2.50 per gallon in 2020, to $3.20 per gallon in 2021, then $3.55 per gallon in 2022. It was assumed that the following year would be a 5% decrease, in 2023, down to $3.27 per gallon. For comparison's sake, current fuel pricing through September, 2019 is $2.38 per gallon.

NPV Analysis

Option	Description	+/-	NPV Impact
1	12/399	-	$ 896,536
2	15/399	-	$ 880,479
3	15/599	-	$ 891,184

Fuel Analysis –

All 3 vessels impacted substantially equally, as all three vessels burn roughly the same gallons per day.

Net Present Value Summation

The cumulative financial impact of all testing upon the three different vessel configurations is virtually indistinguishable, with each result ending between $35.5M and $36.5M, with a maximum variance of -2.68%, which is well within the margin of error for such a long term, forward looking forecast.

Option	Description	NPV Base	NPV D1	NPV D2	NPV D3	NPV D4	NPV D5	NPV Fuel	Cumulative	Percentage Variance
1	12/399	$38,552,406	$1,037,322	($1,087,452)	($706,445)	($652,276)	($696,712)	($896,536)	$35,550,306	-2.68%
2	15/399	$39,319,640	$1,146,286	($1,087,452)	($619,855)	($652,276)	($696,712)	($880,479)	$36,529,152	-
3	15/599	$39,016,492	$1,174,043	($1,087,452)	($654,112)	($652,276)	($696,712)	($891,184)	$36,208,799	-0.88%

The primary explanation for this result are the virtually identical operating costs associated with the three different vessel sizes. While there are minor variances in maintenance, painting and drydock, these items are grant funding reimbursed and have minimal impact to the bottom line.

It is quite evident that the boat schedule is the primary driver of cost structure at CBITD. While these vessels have length differences of 28 feet, a capacity differences of 3 cars and 200 passengers, they will cost virtually the same amount to operate. The single largest component of cost is the level of service provided, not vessel size as contemplated by this project.

In conclusion, these, or any tests to the various vessel configurations will result in very similar results for each of the 3 vessel options. It is not clear that any of the vessel configurations will perform better financially than any other given forward looking analysis or ridership shocks.

As any pro-forma tends to be, this analysis is variable and improves with new information and data that becomes available over time. As further project developments are made, assumptions here will be checked, and updated as necessary to ensure that the project remains on track, for the benefit of the islands and island communities. As the design process moves forward and construction estimates are further developed and narrowed for vessel configurations, CBITD staff will re-examine this analysis and consider estimated construction cost against budget, available grant funding and overall financial implications of the project as a whole. At that time, a recommendation will be formulated and made available to the Board of Directors detailing those considerations.