



Guemes Island Ferry Committee

Allen Bush, Jr. Anne Casperson Steve Orsini (Chr.) Sally Stapp Carl Ullman

March 9, 2014

Capt. Rachel Rowe
500 I Avenue
Anacortes, WA 98221

Via electronic mail

Re: Guemes Island Ferry Committee's Comments on: M/V *Guemes* O.N. 601686 Ferry Replacement Plan, Rev B, Prepared by Elliott Bay Design Group (EBDG)

Dear Rachel:

The Guemes Ferry Committee appreciates Skagit County's initiative in undertaking a serious and thoughtful investigation of future needs for the Guemes Ferry operation. We appreciate this opportunity to offer our thoughts on Revision B of the M.V Guemes Ferry Replacement Plan prepared by Elliott Bay Design Group, dated November 22, 2013 (which for convenience we will call the "Plan").

We believe the Plan is a useful compilation of public information and professional evaluation regarding the ferry situation. One of its most important contributions is the attention it draws to areas where data remains open to interpretation and to topics on which the Ferry Committee can contribute further information. As a result, we do not believe the County should proceed on the recommendation in the Plan at this time, and should continue to work with the Committee to refine it and further inventory the response options. There are three matters highlighted by the Plan that we want to pursue in the present context.

1. Focusing on Replacement. As an initial matter, we were a bit surprised to see that the contractor had proceeded directly to a Ferry Replacement Plan, as contrasted with what we had expected would be a more modest survey of the condition of the current vessel. Of course the Plan does offer considerable valuable information in that regard, but we note that the overall tone seems to go beyond what we expected and to be more aggressive than we expected at this time given that the Coast Guard inspections have not noted any deficiencies and the 2010 Belford "Guemes Hull Condition Survey" established hull deterioration at only 4%.

Also, the economic comparisons of the future options do not use Net Present Value calculation methodology. NPV takes into account the time-value of money (that is: a dollar you spend today is worth more than a dollar spent in the future because while you still have the dollar, you can invest it elsewhere; in addition, inflation erodes the value of a dollar over time). The Plan did not do an NPV analysis. It looked only at the total dollars spent for the 3 options at the end of

the planning horizon (23 years). This flaw in the financial analysis greatly favors option A since options B & C delay expenditures, and therefore according to industry standard NPV analysis, options B & C spend “cheaper” dollars than does option A.

2. *Ridership.* In two places the Plan postulates that the ferry is currently operating at maximum practical capacity. (Pages 7, 12.) This postulate, and the data supporting it, are difficult to evaluate. First, the Plan does not explain what it means by “capacity” or “practical capacity.” Does it mean that on certain runs vehicles may not get on the next ferry due to a long ferry line? How does the term “capacity” accommodate the fact that the great majority of runs through the year are less than fully loaded? The County’s data show that the number of runs for which a driver is forced to wait for one or more ferry runs because of crowding is indeed relatively small. Thus, we are interested in better understanding the concept of “capacity” in the Plan and in the County’s thinking.

Second, the Plan’s conclusion about capacity seems unpersuasive. On page 7 the conclusion is based on the Plan’s observation that data show vehicle traffic has leveled off in recent years. One’s first reaction to that data is that, given that most runs are less than full, there is no capacity problem. That is, there is not a backlog of vehicles that a larger ferry or more frequent runs would accommodate. While, again, we know there *are* backlogs in the summer, if the Plan is suggesting that the overall ferry operation must be designed around peak demand, we would need to be persuaded that such an approach is cost effective in this setting. There is no discussion in the Plan of adding extra runs during peak season, which might address the matter more cost effectively.

Similarly, the statement on page 12 that “passenger ridership also has the potential to reach ferry capacity” is difficult to accept. (Again, we note that it is unclear exactly what “capacity” means.) The statement seems to be contradicted by the Plan’s analysis at page 7 which postulates a 10% increase in passengers (over the 2007 numbers) by 2033. Since personal experience teaches that the passenger compartment is rarely full, and the Plan’s data do not show an upward trend in passengers, it is very difficult to accept the Plan’s apprehensions about reaching passenger capacity.

3. *Condition of the Guemes:* The Plan concludes that the current vessel needs replacement due to its “fair” condition. The *Guemes* is about 35 years old yet her hull is in good shape.

“The overall structural integrity of the hull is considered good. An ultrasonic thickness (UT) survey of the hull conducted in October 2010 indicated a large majority of the hull is sound with little corrosion. Wastage in the shell plating was generally less than 4%.” p. 13

The report details a number of areas, such as corrosion in the engine foundations, that need correction. Certain items of machinery, like the outdrives, and such items as electronics need replacement or upgrading. The total cost for attending to these overhaul items comes to about \$929,000 but yields a vessel serviceable for at least another 15 to 18 years (p. 17). This contrasts with the estimated capital cost for a new vessel of about \$8.4 million.

Given this cost contrast, it is our view that extending the life of the current vessel warrants stronger consideration. This is especially true since the immediate replacement suggested in the Plan does not consider that in 20 years many of the “new” vessel’s components will be obsolete in the same way that causes the Plan to condemn the current *Guemes*; for example, advances in electronics, engine efficiency, and propulsion mechanisms must be expected in the next 20 years.

The Plan seems to strain to downplay the current good condition of the *Guemes*. The report does a 23 year maintenance cost analysis, but there are assumptions in the figures which we find prejudice the conclusion toward “an immediate replacement” of the *Guemes*.

Importantly, the Plan incorporates data arising from alterations made to the vessel in 2005. In that year, a series of expensive “upgrades” were performed on the vessel that totaled over \$750,000. The problems started with dolphin replacement on the *Guemes* side. The old dolphins had been placed further toward the end of the vessel when it was docked. The new dolphins were placed about amidships when the vessel docked. When the vessel rolled, especially in a strong westerly wind, there was an unacceptable risk that the bridge (conning tower) of the vessel could hit the dolphin causing severe damage and possibly injuring the captain. To correct this problem a wide apron was welded to the vessel. About the same time, a decision was made to repower the vessel with heavier four-cycle Cummins KT 19-M3 engines replacing the lighter two cycle Detroit Diesels, even though the latter three engines (one in spare) still had significant operational hours in them. When the ferry was launched after the alterations and additions, it listed to one side. Tons of permanent ballast had to be added to correct the list. **None of these one-time alteration costs should be considered routine maintenance. To average them into the maintenance cost data for the *Guemes* skews the maintenance cost curve higher for this vessel.** Yet that was done as noted on page 52 of the Report:

Items that had occurred only once during the recorded period were assumed to have a 20 year maintenance cycle. While these specific items were likely incidental repairs that will likely not require repair again, when taken together they represent an AVERAGE COST (GIFC capitalization) associated with incidental repairs.

Also, we are uncertain about the Plan’s assessment of the potential useful life of the *Guemes*. Option B (“minimal” overhaul) offers a 10-year extension of the *Guemes*’ life. Option C (“major” overhaul and hull extension) offers 18 years, a difference of 8 years. But the only differences in the bulleted overhaul lists for the two Options (setting aside the 22 foot extension in Option C by foregoing greater “capacity”) appear to be (i) refurbishment of hull, and (ii) refurbishment of piping systems. In light of the 2010 confirmation of the solidity of the hull, we do not understand the need for the first refurbishment. If the 18-year life extension can be achieved by adding piping refurbishment to Option B overhaul, this possibility should be strongly considered.

Conclusion

We do not at this time endorse the Plan’s conclusion that the County should proceed immediately to replace the *Guemes*. Rather, if the \$929,000 in recommended upgrades and

overhauls are accomplished, perhaps adding refurbishing the piping, the vessel should last another 15-18 years, which might be preferable. We cannot agree that the flat to declining ridership curves support the statement: "Vehicle ridership indicates that the ferry has been operating at maximum practical capacity for some time." Further, the replacement maintenance cost analysis is suspect both for its averaging in one time costs, not using NPV, and comparing a 35 year old vessel to a new one.

We hasten to repeat, however, that it is propitious that the County is pursuing a plan for the replacement of the *Guemes* when it reaches the end of its useful life. We sincerely appreciate the County's initiative and look forward to working periodically with the County on this important matter.

Sincerely,

Guemes Island Ferry Committee



Guemes Island Ferry Committee

Allen Bush, Jr. Anne Casperson Steve Orsini (Chr.) Sally Stapp Carl Ullman

April 29, 2014

Capt. Rachel Rowe
Guemes Ferry Operations
500 I Avenue
Anacortes, WA 98221 Via electronic mail

Re: "Capacity" of the Guemes Ferry system

Dear Rachel:

We would like to continue the discussion of the concept of "capacity" as it affects the Guemes Ferry operations. We continue to be concerned that the term is used to mean different things at different times. More specifically, the term sometimes means the physical vehicle capacity of the *Guemes*, and other times it means the overall system's capability to meet demand for passage to and from Guemes Island in a cost effective way.

To clarify this for future discussion, we propose to use "capacity" to mean the number of vehicles the *Guemes* can carry on deck. It is instructive to look at when this physical vehicle capacity of the *Guemes* might be having an impact on the overall system's capability described above. Let us propose that when the *Guemes* is asked to carry more than 17 vehicles – that is, 77% of its 22 vehicle physical capacity – it might compromise the overall system's capability to meet demand for passage to and from Guemes Island in a cost effective way.¹

Skagit County Public Works has made available the Guemes Ferry ridership data on its webpage. 2011 vehicle ridership totaled 14,302 trips to and from Guemes, 3,567 of which carried 17 or more vehicles.

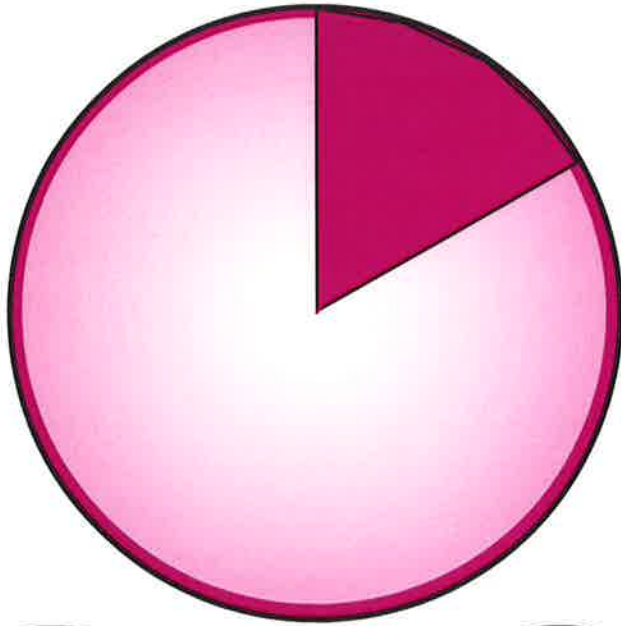
- * 2011 had 18% of runs to and from Guemes above the 17 vehicle threshold (see graph)
- * 2013 saw a total 14,336 runs to and from Guemes while 4,292 of those runs, 29%, were above the 17 vehicle threshold.
- * Month by month comparisons for 2011 vs 2013 vehicle traffic (see graph) indicates an 11% increase in threshold in 2013 while the month of August had the most threshold runs with 39%.

These figures reinforce our opinion that the physical vehicle capacity of the *Guemes* has not been reached and does not justify extension of the *Guemes* or purchase of a new vessel. We continue to be interested in the County's thoughts on this facet of the ferry service. As we mentioned earlier, we have some other ideas about how the overall system's capability to meet demand for passage to and from Guemes Island in a cost effective manner can be improved and we want to discuss those at an appropriate time.

Cordially,

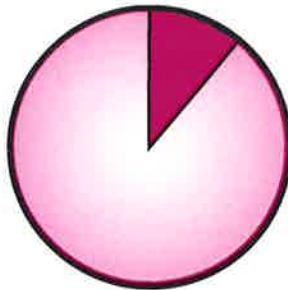
Guemes Island Ferry Committee

¹ County data shows that when runs include 17 or more cars there is an increase in late departures.

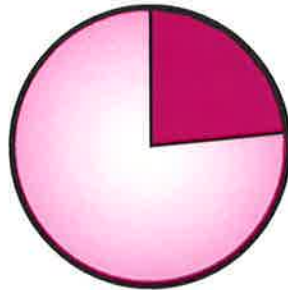


2011

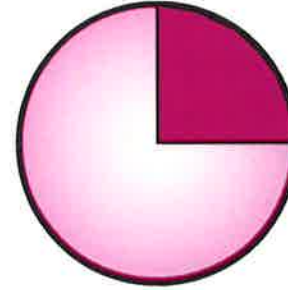
Total Runs: 14,302
 Threshold Runs: 3,567
 18%



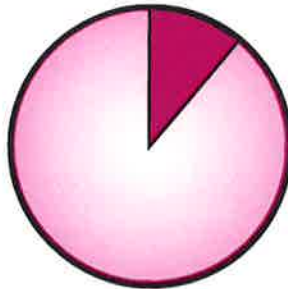
January
 Total Runs: 1368
 Threshold Runs: 192
 14%



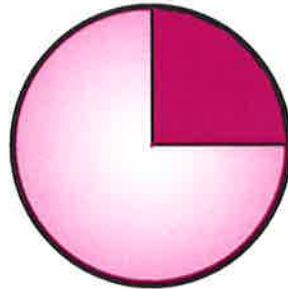
May
 Total Runs: 470
 Threshold Runs: 113
 24%



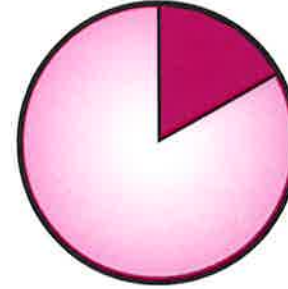
September
 Total Runs: 1408
 Threshold Runs: 361
 25.5%



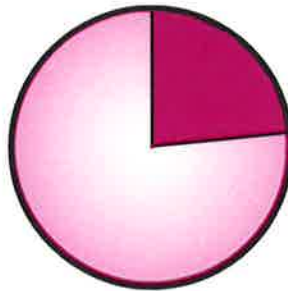
February
 Total Runs: 1258
 Threshold Runs: 181
 14.5%



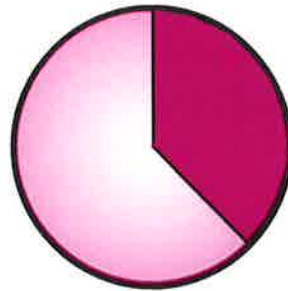
June
 Total Runs: 1390
 Threshold Runs: 346
 25%



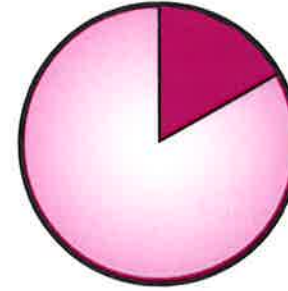
October
 Total Runs: 1408
 Threshold Runs: 264
 19%



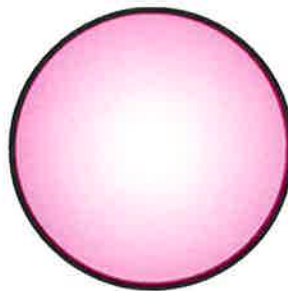
March
 Total Runs: 1250
 Threshold Runs: 303
 24%



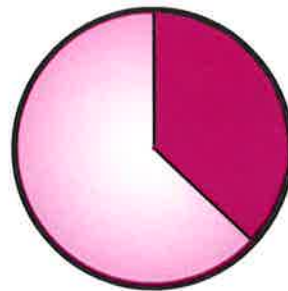
July
 Total Runs: 1480
 Threshold Runs: 497
 33.5%



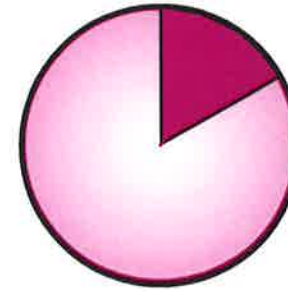
November
 Total Runs: 1362
 Threshold Runs: 243
 18%



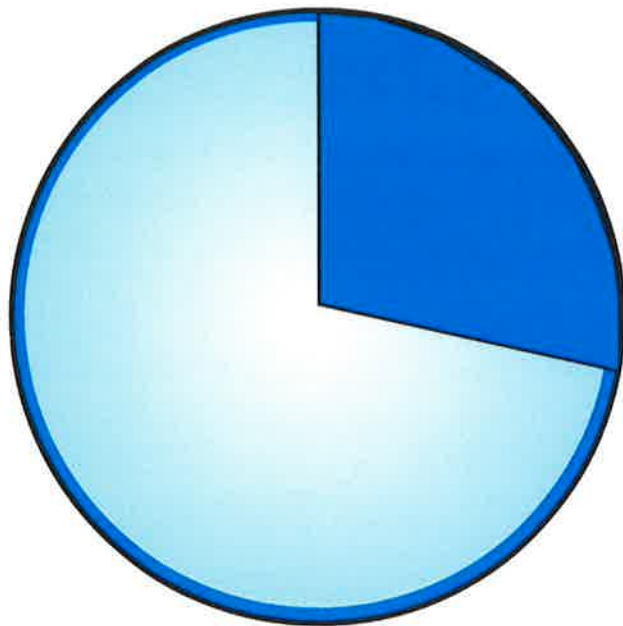
April
 Total Runs: 0
 Threshold Runs: 0
 Outage



August
 Total Runs: 1488
 Threshold Runs: 487
 32.5%

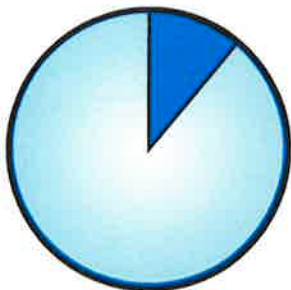


December
 Total Runs: 1420
 Threshold Runs: 228
 16%

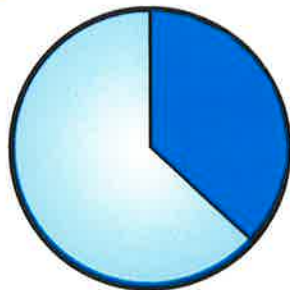


2013

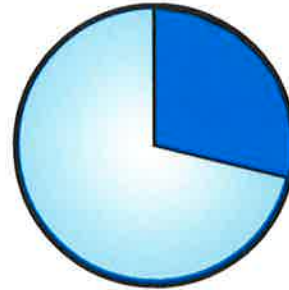
Total Runs: 14,336
 Threshold Runs: 4,292
29%



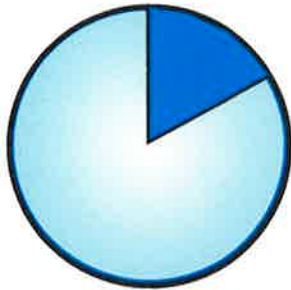
January
 Total Runs: 1422
 Threshold Runs: 199
14%



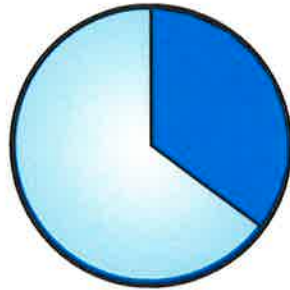
May
 Total Runs: 1464
 Threshold Runs: 465
32%



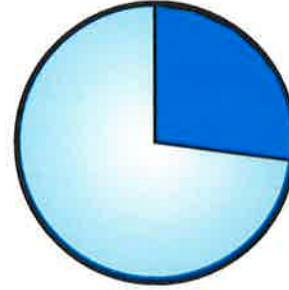
September
 Total Runs: 1444
 Threshold Runs: 422
29%



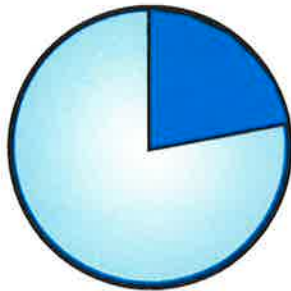
February
 Total Runs: 1284
 Threshold Runs: 229
18%



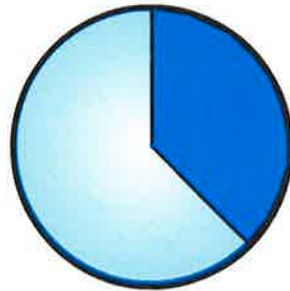
June
 Total Runs: 1440
 Threshold Runs: 442
31%



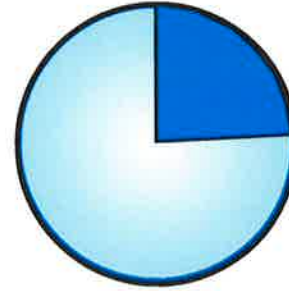
October
 Total Runs: 1434
 Threshold Runs: 392
27%



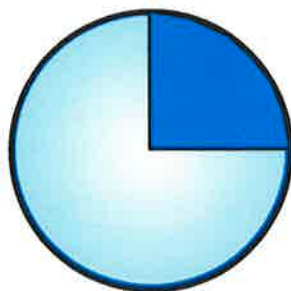
March
 Total Runs: 1422
 Threshold Runs: 296
21%



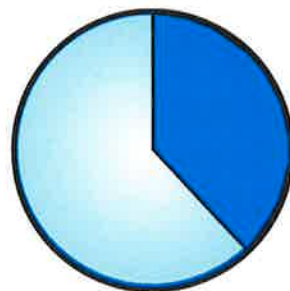
July
 Total Runs: 1516
 Threshold Runs: 570
37%



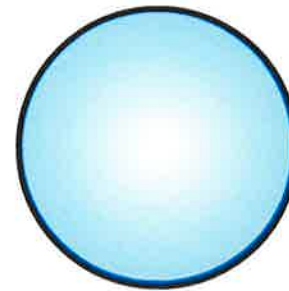
November
 Total Runs: 1380
 Threshold Runs: 333
24%



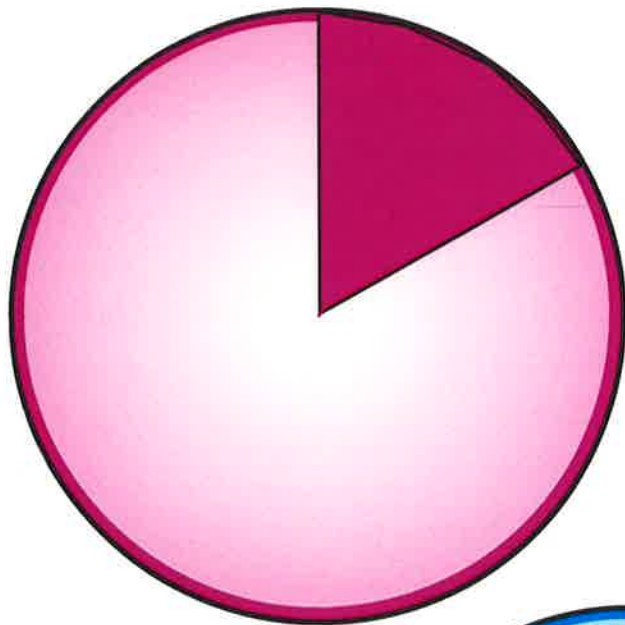
April
 Total Runs: 1386
 Threshold Runs: 343
25%



August
 Total Runs: 1524
 Threshold Runs: 601
39%

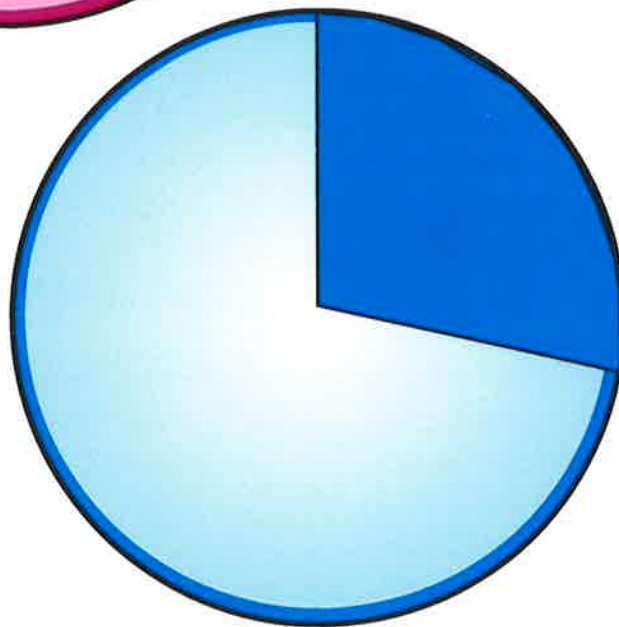


December
 Total Runs: 0
 Threshold Runs: 0
No Data



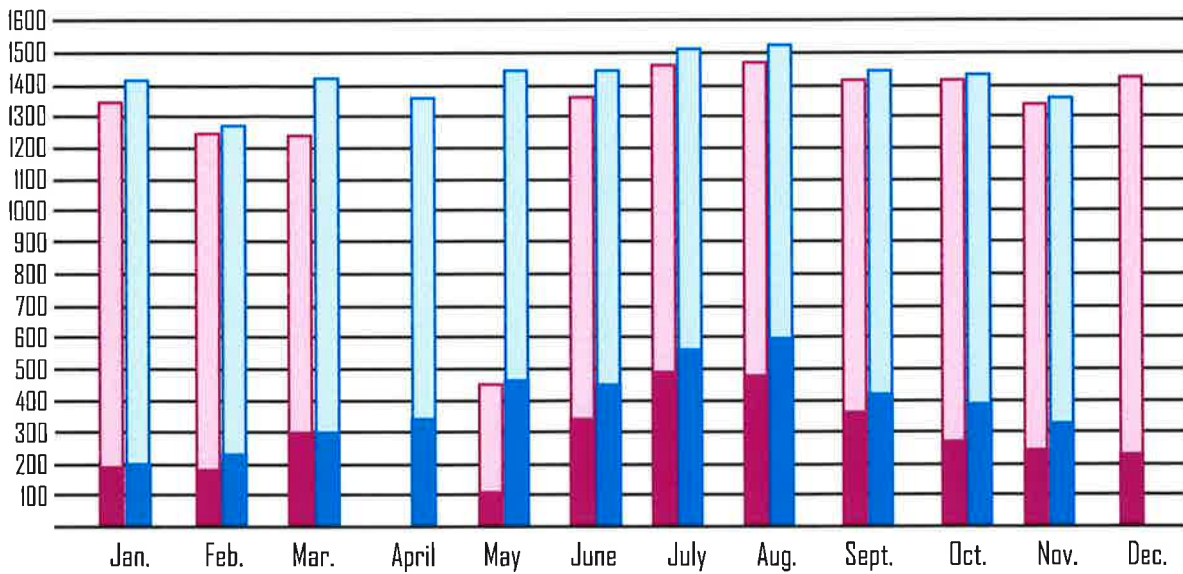
2011

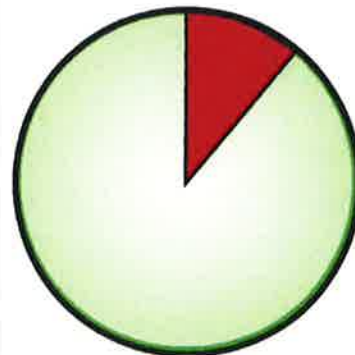
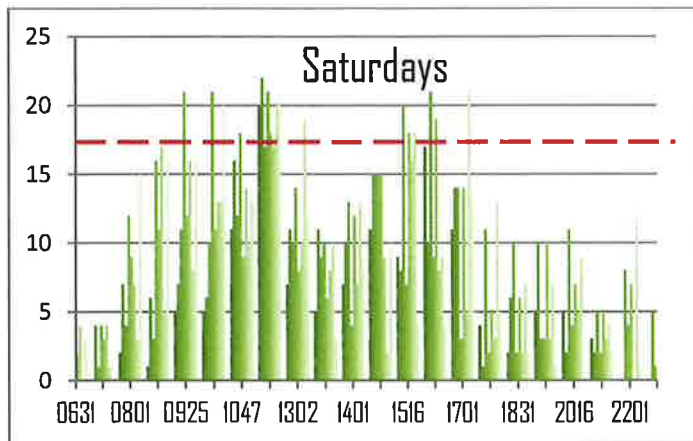
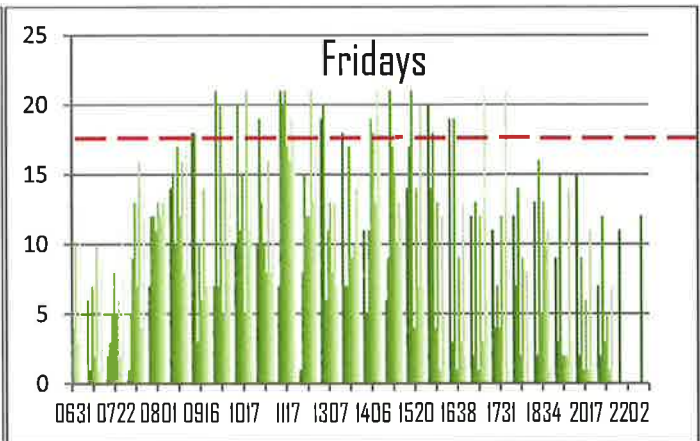
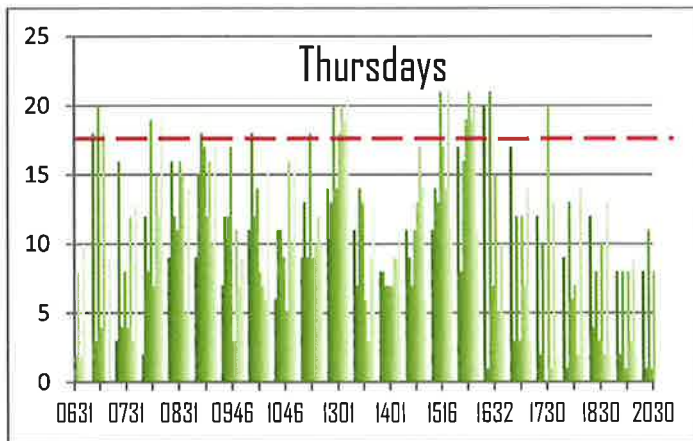
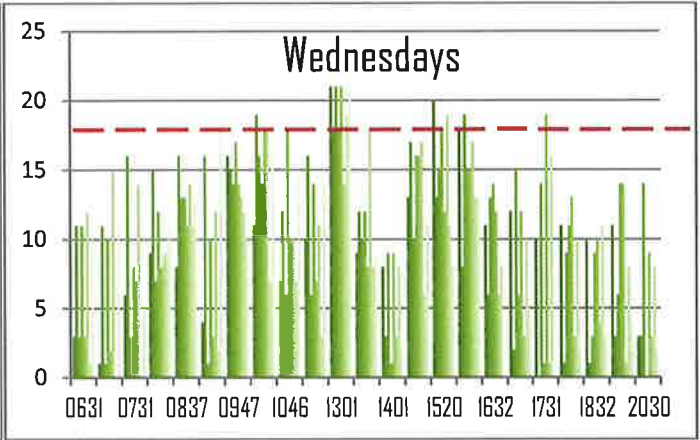
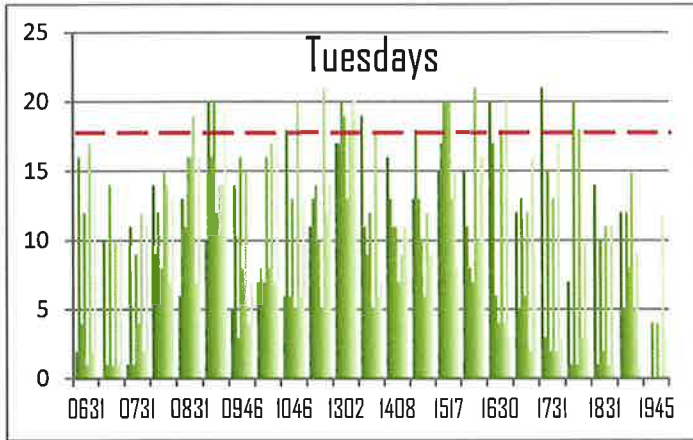
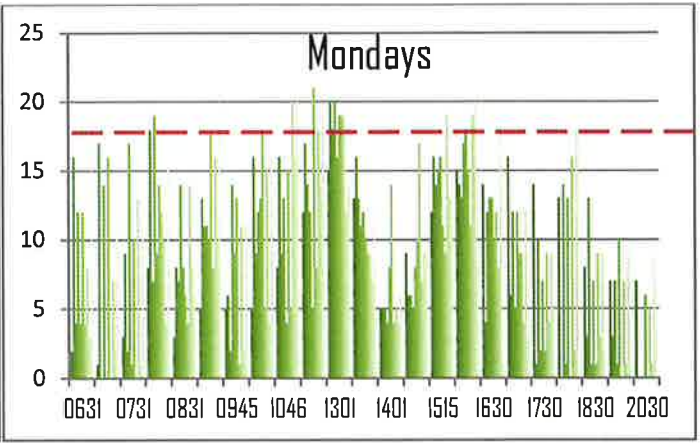
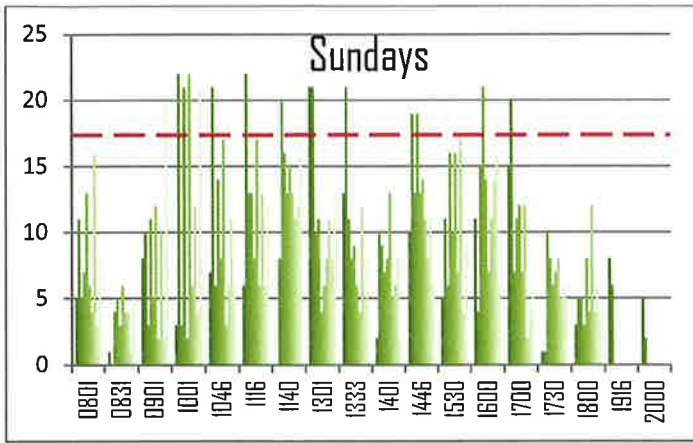
Total Runs: 14,302
 Threshold Runs: 3,567
 18%



2013

Total Runs: 14,336
 Threshold Runs: 4,292
 29%





January 2011

Total Runs: 1368
Threshold Runs: 192

14%

Vehicle Ridership/Days of the Week with a threshold of 17 vehicles per run in either direction

Rachel Rowe

From: Dan Berentson
Sent: Wednesday, April 02, 2014 7:53 AM
To: Rachel Rowe; Paul A. Randall-Grutter
Subject: FW: Guemes Ferry Cost Spreadsheet 2005-2013
Attachments: Skagit County Guemes Ferry Contracts 2005-2013.xls

From: Tim Rosenhan [<mailto:tim@innovakayak.com>]
Sent: Thursday, March 27, 2014 4:39 PM
To: Dan Berentson
Subject: Guemes Ferry Cost Spreadsheet 2005-2013

Hi Dan,

For my own edification I ran the numbers on the Guemes Ferry from the County website contract records, and put them into a spreadsheet. I wanted to see the costs organized by Engine Repairs, Outdrive Repairs, and Haulouts. I picked 2005 since that was the year the engines were changed from Detroit Diesels to Cummins.

What stands out to me is that the engines have gone 6-8 years before they were changed out, and the outdrives have gone at 3-4 year change-out intervals. Only one engine was rebuilt since the three new engines were purchased in 2005. That is the engine that was swapped out last year and failed badly a couple of weeks ago with only about 1,800 hours on it. Two outdrives were rebuilt in 2005 and again by a different outfit in 2008.

If you subtract the purchase price of the engines in 2005 and the \$50k catalytic converter installation in 2013, the County spent \$125,932 on engine work over the last 8 years. Over that same period \$566,144 was spent on outdrives. At the end of 2013 we ended up with two high-time engines and two high-time outdrives. I think it's a fair comparison of the relative repair costs of the engines and outdrives, because both systems were at about the same state of run-out at the end of 2013. That is, two engines and two outdrives are due for rebuilding now, or close to it.

At last night's ferry meeting on Guemes Island much of the discussion was on the need for a new ferry. I am agnostic on this. If you can get Federal or State funding to do so, that would lower County costs for some of the rebuild costs the County is going to have to eat soon. However, *when* you might get that funding and the amount you would get is pretty much unknowable. Even if you received \$10 million today, EBDG says that you still would have a 3-year lead time to get a new boat into service.

So it would seem that you have to keep managing this ferry at a sustainable level of service to keep the repair costs minimized, that is at least until you have found out that you have won the ferry funding lottery :-)

Here's my two cents. The old Uhlstein Z-drives are killing your repair costs and risking expensive emergency outages. I would contact Cummins and Rolls Royce (or another Z-drive maker) and find out what engine/Z-drive combo would work best and get a price estimate. Maybe the KTA 19 M3 Cummins you have now are the right engines, but maybe it's time to look at changing out the drive train as a package with modern, matched stuff. Your three engines don't have much run-time value left, and if another engine would match the Z-drive better, now is the time to install the set. In any case, ditch the old Z-drives.

New Z-drives will surely have a better continuing repair cost prognosis than the existing drives and gearboxes. However, the future wear and tear on these drives and transmissions would be significantly reduced if the ferry is lightened. Rebuilding two Z-drives costs you \$250k every 3 years. As I mentioned last night, the ferry is now 30 -40 tons heavier than the original design because of the "muffin-top" deck extensions put on when the boat was re-engined. The added weight was equivalent to adding a full load of vehicles to the ferry, and after the extensions were added the boat sunk 6-7-inches lower on its lines. The 3-foot wide deck stand-offs are filled with concrete and require additional ballast weight in the ferry to trim it level. They were added to keep the ferry superstructure from rolling into pilings installed in 2005. Had the pilings/dolphins been located correctly, the stand-offs would not have to have been added. In my opinion, the ferry's obesity is wearing out the drive train prematurely, plus adding to the impact on the dock structures as well as decreasing fuel economy. As long as you are putting in new dolphins soon, why not locate them correctly, and reposition the interfering ones at the same time? Then the deck extension could be cut off, probably much more cheaply than its original fabrication cost.

I call this my Jenny Craig plan.

Cheers,

Tim

Tim Rosenhan
Innova Kayak
(360) 707-2855

Skagit County Guemes Ferry Contracts 2005-2013

Engine, Outdrive, and Haulout-Related
3/27/2014 Compiled by Tim Rosenhan

Contract	Begin Date	Contractor	Description	Amount
C20130226	6/3/2013	Diesel Services	Tune up on #1, Leak-down Test on #2 Engine	\$ 900
C20130132	4/2/2013	Diesel Services	Turbocharger Rebuild	\$ 6,521
C20130112	3/18/2013	Emissions Technologies	Catalytic Converter Installation	\$ 50,000
C20110239	9/6/2011	Tri-County Diesel Marine	Coupling for Engine Rebuild	\$ 5,778
C20110376	8/25/2011	Integrity Marine	Emergency Repairs	\$ 344
C20110377	8/25/2011	Dakota Creek	Emergency Repairs	\$ 1,003
C20110375	8/5/2011	Tri-County Diesel Marine	Emergency Repairs	\$ 2,090
C20110239	6/27/2011	Tri-County Diesel Marine	Repair of engine block	\$ 2,500
C20110239	5/23/2011	Tri-County Diesel Marine	Rebuild of one KTA19-M3 Diesel Engine	\$ 52,500
C20090595	10/19/2009	Cummins NW	On call as needed for two years	\$ 25,000
C20090081	2/2/2009	Diesel Services	On call as needed repairs for one year	\$ 9,500
C20070086	6/1/2007	Cummins NW	Diesel Parts	\$ 509
C20070223	2/1/2007	Cummins NW	Misc. Repairs As Needed for One Year	\$ 10,000
C20060201	4/17/2006	Diesel Services	On call as needed repairs	\$ 4,500
C20060031	9/19/2005	Tacoma Diesel and Equipment	Diesel Parts	\$ 4,787
C20050304	7/25/2005	Cummins NW	Purchase of 3 Diesel Engines	\$ 355,584
				\$ 531,516

Contract	Begin Date	Contractor	Description	Amount
C20090559	9/14/2009	Pacific Star Marine	Rebuild Outdrive Gearbox	\$ 24,500
C20080275	7/8/2008	Pacific Star Marine	Rebuild Two Outdrives	\$ 235,000
C20070554	8/7/2007	Dakota Creek	Emergency haulout and Outdrive Repair	\$ 30,000
C20060404	6/18/2007	Rolls Royce	Settlement On Invoice Dispute	\$ 198,777
C20060125	3/13/2006	Dakota Creek	Rebuild Outdrive	\$ 42,712
C20050550	10/28/2005	Dakota Creek	Emergency repair of Outdrive Seal	\$ 13,991
C20060404	6/1/2005	Rolls Royce	Outdrive Rebuild	\$ 21,164
				\$ 566,144

Haulout

Contract	Begin Date	Contractor	Description	Amount
C20120179	10/15/2012	Foss Engineering	Haulout, plus change orders	\$ 305,320
C20100334	11/1/2010	Foss Engineering	Haulout Change Order	\$ 24,691
C20100334	7/26/2010	Foss Engineering	Haulout	\$ 227,999
C20090178	3/16/2009	Puglia Engineering	Haulout	\$ 162,431
C20080271	4/15/2008	Puglia Engineering	Haulout, outdrive swap-out	\$ 308,304
C20070357	5/3/2007	Dakota Creek	Haulout	\$ 221,155
C20050481	11/14/2005	Puglia Engineering	Outdrive repair, damages for late engine delivery, misc.	\$ 6,871
C20050451	10/24/2005	Puglia Engineering	Misc. Engine, Generator, and Fitting Work	\$ 11,928
C20050430	10/3/2005	Puglia Engineering	Work associated with installing new engines	\$ 99,757
C20050382	9/6/2005	Puglia Engineering	Haulout, deck extension, engine work	\$ 359,805
				\$ 1,728,261

Rachel Rowe

From: Dan Berentson
Sent: Thursday, April 03, 2014 4:32 PM
To: Rachel Rowe; Paul A. Randall-Grutter
Subject: FW: Images of heavy ferry

From: Tim Rosenhan [<mailto:tim@innovakayak.com>]
Sent: Thursday, April 03, 2014 4:31 PM
To: Dan Berentson
Subject: Re: Images of heavy ferry

Hi Dan,

Here's a link to an article I wrote on the heavier ferry.

<http://linetime.org/pages/2774/Weighting-for-the-Ferry/>

Cheers,

Tim

Tim Rosenhan
Innova Kayak
(360) 707-2855

On Wed, Apr 2, 2014 at 7:52 AM, Dan Berentson <danb@co.skagit.wa.us> wrote:

Thanks, Tim. Interesting video.

Dan

From: Tim Rosenhan [<mailto:tim@innovakayak.com>]
Sent: Tuesday, April 01, 2014 3:12 PM
To: Dan Berentson
Subject: Images of heavy ferry

Hi Dan,

Here is an image of the way the ferry rides now with the added 30 - 40 tons. I also give a link to an interesting YouTube video taken from by a schoolbus driver on the ferry with a load of kids. She does a great job of keeping the kids unworried in the waves, but then she gets a little concerned.

Ferry Ride to School, Part 1

<https://www.youtube.com/watch?v=yCJkgFz3Aww>

The *M/V Guemes* would ride a helluva lot better without that weight, ship less green water onto the deck, and run easier on the gear. Just sayin'.

Cheers,

Tim

Tim Rosenhan

Innova Kayak

(360) 707-2855

Weighting for the Ferry

March 04, 2008 at 6:22am • Created by: LineTime

The *M/V Guemes* rides lower in the water now, but it meets US Coast Guard stability requirements. This is the conclusion of the Stability Letter issued to Skagit County by the USCG on December 5th, 2007. The engine replacement and hull work done in 2006 had a larding effect on the vessel.

The heaviness of the ferry's rolling was noted immediately by the crew after the completed engine project. When the channel got lumpy, veteran ferry riders also could hardly miss the ponderous rolling and decks awash.

The crew was concerned enough to request a formal stability check. Last June the ferry was tested in Anacortes and witnessed by Coast Guard personnel in a standard procedure from USCG regulations. While the ferry was sitting normally in the water at dockside, a measured amount of weight was added on the deck a specified distance outboard from the boat's centerline. This weight tilted the ferry to the side, and the degree of list was carefully noted. From this data the center of gravity and center of buoyancy were determined. The purpose of the test was to confirm that the ferry could still easily right itself after heeling over in a seaway.

The good news is that the ferry is stable. It will still return to upright like a weighted punching bag when smacked over on its side.

The bad news is that the ferry is considerably lower in the water and heavier than she was when new. How much lower? About six inches. This was confirmed in the test. The original allowable minimum freeboard (the distance from the deck to the water) has been reduced from 2 feet 11- $\frac{3}{4}$ inches down to 2 feet 6 inches. Before-and-after photo images of the ferry confirm the half-foot lowering stemming from the 2006 work.



The left hand image was taken January 1, 2004 and the one on the right February 19, 2008. Both photos were taken of a fully loaded 1pm run.

What was done to make the ferry so heavy?

The 2006 haul-out included several changes to the vessel, most of which added tonnage. First, the original Detroit Diesel engines were replaced with Cummins engines. The Cummins are four-cycle units and heavier and bigger than the two-cycle Detroit's. Larger engine houses were also installed. Second, some weight was added to make a wheelchair-capable ramp over the doorsill

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in the passenger cabin. But the greatest weight gain came from the third project, extending the decks outboard three feet on each side of the boat.

The deck extensions were needed to keep the ferry from getting damaged from hitting its own dock pilings. The new pilings installed in 2005 on the Anacortes terminal side were placed at the mid-point of the vessel, rather than towards the ends of the boat. These pilings were also driven into the channel bottom at a very vertical angle, so when the ferry rolled from side-to-side, while tied up at the dock at low tide, the pilings threatened to hit the ferry's pilot house. The deck extensions gave the pilot house safe clearance.

How much heavier is the ferry?

The *M/V Guemes* is now approximately 60,000 pounds heavier after the 2006 work. This can be calculated by figuring the area of the vessel at the waterline multiplied by the half-foot added displacement of seawater. To give some idea of the added weight, it's roughly equivalent to twenty 3,000-pound cars. So it is no wonder that the ferry is rolling heavily.

The ferry has packed on some pounds in its middle age, about as much as a full ferry load of cars. Unless the County is prepared to correct much of the work done in 2005 and 2006, the ferry will remain obese.

Tim Rosenhan, 3.2.8

TAGS: Ferry • Haul Out

comments:

(There are no comments yet.)

add a comment:

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Guemes Island Ferry Committee

Allen Bush, Jr. Anne Casperson Steve Orsini (Chr.) Sally Stapp Carl Ullman

April 8, 2014

Capt. Rachel Rowe
Guemes Ferry Operations
500 I Avenue
Anacortes, WA 98221

Via electronic mail

Re: Following up on the March 26, 2014 public meeting at the Guemes Community Hall

Dear Rachel:

Thank you again for the March 26 meeting at the Guemes Community Center, for bringing Mr. Williamson and Mr. Jankowski to explain the EBDG Plan, and for controlling the meeting to keep it productive. The Guemes Island Ferry Committee also appreciates your offer to respond to written questions submitted after the meeting.

Below are some of the Committee's questions emerging from the EBDG Plan and the meeting. (You will see that some questions offer parenthetically the Committee's thoughts.) We strongly hope that these questions are taken in the spirit in which they are intended, to continue a constructive exchange on these matters that do not offer anyone an easy answer or solution.

1. Should an option be considered that (i) extends the *Guemes's* life per the current Option C (Mid-Body Extension), but (ii) without the mid-body extension itself? (The Committee thinks so.) Can EBDG run the relevant numbers?
2. What are the County's thoughts on the question of "capacity?" More specifically:
 - a. The Committee's understanding is that the Alaska Marine Highway philosophy might be summarized as "no vehicle left behind." Does the County aspire to that level of service? (The Committee thinks that with the less frequent, longer Alaska runs it might make sense, but for the Guemes run we do not think it's practical.)
 - b. In the same vein, EBDG's assessment of capacity is guided by the data for peak-season Sundays. What are the County's thoughts on using that guide? (The Committee thinks it is unnecessarily ambitious.)
 - c. Does the County anticipate a significant increase in vehicle and passenger ridership in the next two decades? If so, how much?

d. Does the County think that the capacity of the vessel itself should be increased? (The Committee is inclined to think this is not useful and is too expensive.)

e. What other steps might be taken to deal with peak vehicle use. (The Committee has several ideas that we would like to share at an appropriate time. But for now we are interested in the County's thoughts.)

3. The Committee expressed its view in its March 9 letter that the one-time alterations to the *Guemes* in 2005 should not be considered routine maintenance and averaged into the maintenance cost for the *Guemes* as EBDG has done. What are the County's thoughts on this?

4. If a fund to replace the ferry is established, can the County assure with certainty that the money will be protected against being used for another purpose?

5. What is the status of the County's search for funding for the Fourteen Year Plan 2018 vessel replacement or modification/rebuild?

6. In the Fourteen Year Plan 2018 vessel replacement or modification/rebuild, are changes in the vessel's vehicle capacity contemplated?

7. The Committee's understanding is that EBDG's Option C (Mid-Body extension) would add only four cars to the *Guemes*'s capacity because a larger increase would move the vessel into a different and more expensive regulatory category. Is this correct? What are the County's thoughts on this?

Thank you again for your time and consideration. The Committee would like to meet with you to discuss these questions at your and our mutual convenience.

Cordially,

Guemes Island Ferry Committee

Rachel Rowe

From: LineTime <comments@linetime.org>
Sent: Saturday, April 05, 2014 4:23 PM
To: Rachel Rowe
Subject: Survey results
Attachments: Ferry Replacement Plan Survey Results.pdf

Rachel

We have closed the survey on the Ferry Replacement Plan and attached the results below. As you saw at the recent Public Forum, many riders read and considered the report. Our server stats show that 331 people downloaded the report from LineTime.org and 352 people looked at the survey (although only 64 filled it out, many often skipping questions). To avoid issues with some individuals completing the survey many times, we have limited responses to one per computer (IP address) which limits the number of potential respondents in many households. While not as large a sample as we would have liked, perhaps it will be of some use. Please feel free to pass it along to Elliott Bay Group.

Joseph Miller
MJ Andrak

LineTime.org
comments@linetime.org

Survey Results

QUESTION 01

"While the population within Skagit County continues to grow, data indicates that the rate of growth has been decreasing over the past 20 years...If the most recently observed growth rate on Guemes Island continues, the population will increase approximately 24% by the end of 2033."

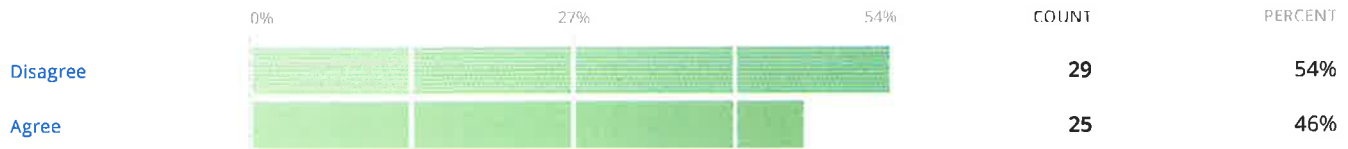
Answers **56** 88%
 Skips **8** 13%



QUESTION 02

"A general reduction in passenger ridership since a 2007 high was observed. Vehicle ridership showed relatively little growth since the mid-1990s, suggesting that the practical vehicle capacity may have been reached...the low passenger ridership levels experienced from 2010 to 2012...may indicate the practical capacity of the ferry" [Please remember that fares rose significantly in 2006 and again in 2008.]

Answers **54** 84%
 Skips **10** 16%



QUESTION 03

"While the overall condition of the vessel is fair...the overall structural integrity of the hull is considered good... the M/V GUEMES has limited remaining useful economic life...As a vessel reaches over 50 years of age, it becomes economically impractical to preserve the vessel." [The Guemes Ferry is 34 years old. Lummi Island's Whatcom Chief is 52.]

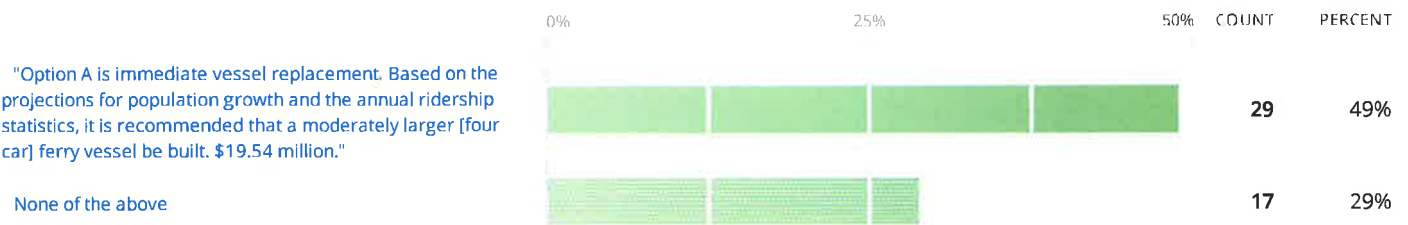
Answers **55** 86%
 Skips **9** 14%



QUESTION 04

Skagit County recovers a large portion of operating costs in ferry fares. Not long ago, the Washington State Legislature approved the recovery of capital costs in fares and the Washington State Ferries now collect a surcharge towards vessel replacement. Each of the three options presented in the report includes \$8,400,000 for a new ferry, plus projected costs for 20 years. Knowing that Guemes Ferry riders may well pay a portion of the following costs, which option do you prefer:

Answers **59** 92%
 Skips **5** 8%



"Option B is to delay the acquisition of a new vessel for ten years and continue the use of the [refitted] existing vessel. \$21.50 million."

11 19%

"Option C is to extend the life of the existing vessel. This would require a major vessel overhaul, including insertion of a mid-body extension to increase the vehicle carrying capacity. It is estimated that this option would allow for continued vessel operation for an additional 18 years, at which time a new vessel would enter service. \$26.74 million."

2 3%

QUESTION
05

Option C includes adding a section in the middle of the current hull which will allow four more cars to fit on deck at an estimated cost of \$630,335. Do you think the benefit is worth the cost?

Answers
59
92%

Skips
5
8%



QUESTION
06

Do you have another option?

Answers
17
27%

Skips
47
73%

- Consider passenger only operations.
A larger ferry will not necessarily increase through-put.
Think about it.
In any given operating time span the 1/3 of operating tome is spent underway. 2/3 rds of the time is spent loading and unloading,
Increase the size of the ferry and this will further skew the loading time upward. Bottom line is that a larger ferry won't increase the throughput.
Consider setting up method for pre loading in a loading area ferry-footprint on Anacortes dock where when the ferry arrives the load happens immediately.
Consider vehicle service is available during one daytime 8 hour shift. Evening passenger service would be by Arrow Launch or other bidding vendor.

81,415,739

Sunday, Mar 30th 11:29AM
- need to look at even a bigger ferry 5 to 10 car groyh will come why not be prepared

80,156,846

Tuesday, Mar 25th 9:45AM
- M/V Guemes is perfectly adequate for the needs of the Islands residents and visiting population.

77,741,291

Sunday, Mar 16th 3:38PM
- Replace the engines. At least have a working spare engine at the ready. Room for 4 more cars is not going to change things significantly enough to warrant spending the money. What would make a difference on high use days is to have additional runs. When you live on Guemes, you learn to be patient. Waiting through 2 ferry runs to get across is the price we pay. Bring a good book.

77,706,298

Sunday, Mar 16th 12:53PM
- new ferry with at least ten car increase in size growth will come to the island so why not be prepared. easier now then ten years from now

77,668,358

Sunday, Mar 16th 9:57AM
- Has a survey been done of relatively new ferries that may be for sale elsewhere because of no longer being suited for the needs of their particular routes?

77,186,274

Friday, Mar 14th 6:40PM

76,912,406	One more run , when needed. Keep it simple !	Friday, Mar 14th 1:59AM
76,742,499	A bridge	Thursday, Mar 13th 2:15PM
76,508,354	A new ferry will be required at some point in the future. This will not happen without bearing some of the cost ourselves. Let's follow a path to minimize that cost.	Wednesday, Mar 12th 10:57PM
76,365,116	Build a bridge.	Wednesday, Mar 12th 3:01PM
	run every 1/2 hour with 1 hour lunch break. just to add 4 extra cars when the crew is already there and ferry often has long breaks (which is when the ferry lines stack up)is not cost effective. Better to work the crew a bit harder.	Tuesday, Mar 11th 9:09PM

Question

07

Any additional comments on the Ferry Replacement Plan?

Answers

17

27%

Skips

47

73%

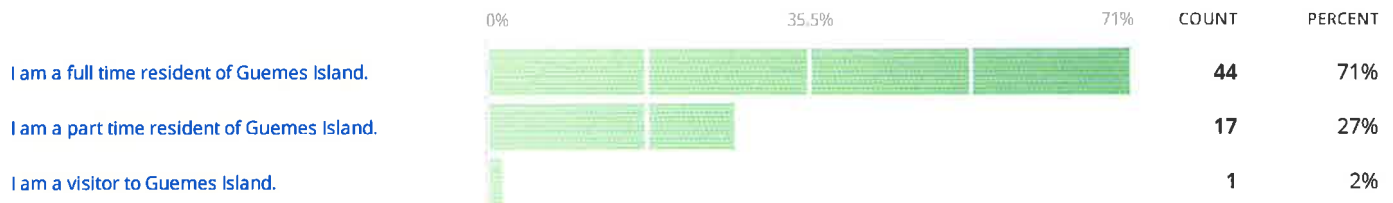
81,415,739	The vessels hull plating is almost to original scantlings. The drivex are the problem. The most prudent upgrade would be to find an alternate propulsion means for the current hull. The reason the ridership is down is due to the non-maritime overview of the road-centric design planners in engineering which is reflected in the mistrust of any common sense long range plannig,	Sunday, Mar 30th 11:29AM
80,456,029	even under option A a new vessel is not likely to come on line before 2018 + and the current vessel drive system maintenance will become increasingly more expensive and disruptive	Wednesday, Mar 26th 1:04PM
78,074,305	The number of runs that the ferry makes needs to be increased. If there were more runs, the transportation system could be more effective. This is the only source of transportation to the island and as such, it should serve the islanders who need to work to afford living on the island. This is especially true in late spring and summer. Having a ferries on the half hour could increase ridership and allow for more income.	Monday, Mar 17th 7:32PM
77,741,291	It would probably be less costly and safer to run if the extended sponsons hadn't been filled with concrete which add significant and unnecessary weight to the vessel. Choosing a more speedy way to pay and board would also increase efficiency and save revenue.	Sunday, Mar 16th 3:38PM
77,706,298	Skagit should provide a small barge to get cars across to the Anacortes side when there is an unexpected ferry outage.	Sunday, Mar 16th 12:53PM
77,186,274	The fairly frequent unplanned breakdowns of the current ferry would seem to provide impetus to the option of soon acquiring a new (or nearly new) ferry with slightly larger vehicle capacity than the current 'Guemes.'	Friday, Mar 14th 6:40PM
76,912,406	Lots of current on the Guemes side, makes it highly important for last second maneuvers. Bigger boats , bigger accidents.	Friday, Mar 14th 1:59AM

76,876,407	Please get us a bigger boat with more frequent weekend sailings. Get rid of the 45 minute Intervals and go back to the 60 minute plus overload (second sailing) schedule. This responds to the flux in ridership and provides much better customer service. If at all possible, get rid of the lunch stoppage. It throws the schedule of for hours.	Thursday, Mar 13th 11:16PM
76,872,898	Really. Who wrote this questionnaire? How can one agree or disagree when the questions are posed as facts? Of course we will need to replace the ferry at some point.	Thursday, Mar 13th 11:01PM
76,382,884	Ferry replacement is the obvious and most economical answer given the unknowns of the vessel's upcoming mechanical issues (and It's unpredictable breakdown periods). replacing the existing ferry with a vessel that only allows for 4 more cars seems a backwards idea. If it's going to be replaced allow for at least 12 more spaces to consider future growth and/or limiting runs with higher number of cars per run.	Wednesday, Mar 12th 3:56PM
76,054,053	The longer we wait, the higher the costs of replacement will be. Recent downtime is the handwriting on the wall to do something sooner than later.	Tuesday, Mar 11th 11:22PM
76,023,149	all seem ridiculously expensive, are these actual bids? build it in China...	Tuesday, Mar 11th 9:09PM
75,954,513	I think we all have a responsibility to operate the ferry as efficiently as possible with a good environmental footprint, so I feel a replacment is the way to go.	Tuesday, Mar 11th 4:42PM
74,694,736	look at the ferrys on the Lake Roosevelt	Saturday, Mar 8th 6:18PM
72,228,742	If you need funds for the ferry no matter what the funds are needed for, you need to realize that the high cost for the ride is not working.Find a better way.	Tuesday, Mar 4th 1:33PM
72,171,364	does the county have a better way of counting and keeping track of passager and oversize trucks	Monday, Mar 3rd 10:02PM
71,852,181	This document does not reflect the actual needs of the system as expressed by the riders and the island residents. Given the facts that the ferry design is a barge hull and deck with a couple of outboard engines, and the hull condition is excellent, why not replace the drive units as needed rather than the entire vessel? This is especially true since the actually ridership in cars and drivers has been declining for several years.	Thursday, Feb 27th 2:45PM

08

How often do you ride the ferry?

Answers **62** Skips **2**
97% 3%



To: Rachel Rowe

Subject: Ferry Replacement Plan questions

Hi Rachel! Here are a few questions I have.

According to the Ferry Replacement Plan (FRP) getting a new ferry is the recommended option. What is the process for deciding which option to take and who decides?

Assuming we decide to get a new ferry, how long does the process take and how is it paid for? I am assuming we will try to get chunks paid for with state/federal funds?

Last month there was an engine issue that put the ferry out for I believe five days. How can you prevent incidents like that from occurring as the ferry's future is planned?

Can you tell me some of the specifics of that incident like what the issue was, what was done to remedy it and how much it cost to repair it?

The Guemes Island Ferry Committee believes there are issues with the FRP and believe repairing the ferry is a better option. How do you respond to their concerns about the report?

Thanks!

Russell Hixson

Reporter

Skagit Valley Herald

Phone: 360-416-2149

Cell: 360-202-9013

1109 3rd Street
Anacortes, WA 98221
April 10, 2014

RECEIVED

APR 11 2014

Capt. Rachel Rowe
Ferry Operations Division Manager
Skagit County
1800 Continental Place
Mount Vernon, WA 98274

SKAGIT COUNTY
PUBLIC WORKS ADMIN

Dear Capt. Rowe:

Thank you very much for seeking citizen input on the Guemes ferry replacement plan. *Guemes* and I are almost exactly the same age; I have been riding it my whole life. As a frequent customer and a practicing engineer, I appreciate this opportunity to submit my comments.

Elliott Bay's report and follow-up presentation are very helpful planning tools, and they seem to suggest conclusively that immediate replacement is the best option. Although I find most of the report's methods satisfactory, I have four questions pertaining to vessel sizing and one question pertaining to fares. I will elaborate on these questions in the paragraphs that follow.

- (1) Future rider demand and its relationship to required vessel size are not explicitly stated. Could an explicit ridership-based methodology be used for vessel sizing?
- (2) The size of the lengthened existing ferry appears to be tightly constrained by tonnage. How could we be sure that this vessel would be large enough to meet passenger demand through the end of its proposed service life?
- (3) The report assumes the notional new ferries to be duplicates of the obsolete lengthened existing vessel. Could the new vessels instead be defined from scratch using modern ferry examples and realistic constraints such as ridership and desired service life?
- (4) Could we include the unique requirements of foot passengers in our replacement plan?
- (5) Could more research be done before any changes are made to the fare structure?

Regarding question (1): The Elliott Bay report includes ten informative pages about ridership and factors that could affect ridership, but it does not synthesize these facts into ridership predictions. I believe that mathematically derived ridership numbers would strengthen the report by creating a sound basis for estimating the required vessel size at given points in time. One easy way to predict annual ridership would be to apply high and low trend lines to the series plotted on page seven of the report and to extend those lines beyond the year 2033. The county's 2030 prediction points could be plotted on the same graph as a reference.

I assume that the ferry experts at Elliott Bay have databases from which they could estimate required vessel sizes based on the aforementioned annual ridership predictions and the historical record of fluctuations in trip demand. I would expect that they could roughly size a ferry to some historically persistent fraction of the peak, mean, or median demand day. Then, with a specific number of passengers and cars to design for, they could apply rules of thumb that I am certain must exist for ferry space allotment, thus resulting in a scientific prediction of vessel size. Alternatively, Elliott Bay has an impressive ferry portfolio from which it could make a parametric estimate of the required vessel size for a given service throughput.

Regarding question (2): Page 23 of the Elliott Bay report explains that the size of the notional replacement ferry was based on lengthening the existing vessel such that it remained just under 100 gross tons, presumably to avoid regulatory complications and costs relating to retrofitting, operation, and manning. By choosing lengthening (option C in the report), we commit to a vessel that is 144.0 feet by 33.5 feet by 6.9 feet (USCG records plus 20 feet of length). We need a ridership forecast to confirm that a ferry of these dimensions would be adequate through 2032. Without this assurance, option C would be too risky to pursue.


Regarding question (3): We could build a much larger new ferry that remains under 100 gross tons. The Pierce County ferry *Christine Anderson*, an Elliott Bay design, is 199.9 feet by 66.0 feet by 16.5 feet, and it is admeasured at 96 gross tons (USCG records). We would have great flexibility if we built a ferry from scratch; we could focus on our riders' needs, and we could take advantage of advancements in hull and machinery design. In light of how well *Guemes*'s hull has held up, we could design the new vessel for a service life of 40 or more years. For all these reasons, I think it makes sense for the notional replacement ferry to be conceived independently of the obsolete, suboptimal, tonnage-limited, lengthened existing vessel. In all likelihood, a replacement ferry designed from scratch would be larger, more advanced, and thus more expensive than the 26-car, \$8.4-million, simplified version of the Port Aransas ferry described in Appendix A of the Elliott Bay report. Moreover, the replacement ferry designed for 2017 (option A in the report) would most likely be smaller than the replacement ferry designed for 2024 (option B), which in turn would most likely be smaller than the replacement ferry designed for 2032 (option C) because of ridership growth over time. All of these considerations could affect the length of the economic planning period, the cost of each option, and ultimately the rank order of the options.

Regarding question (4): Elliott Bay's replacement plan does not address the current and future needs of foot passengers—which, in my opinion, is the demographic with the most to gain from a replacement program. Walk-on ridership in 2007 was within two percent of the county's projected walk-on ridership in 2030, suggesting that foot traffic may be growing more rapidly than we had expected it to grow. There are signs that the existing ferry is undersized for walk-ons and their gear, such as the occasional summer day when cyclists must resort to stowing their bikes near the engine house opposite the passenger cabin. Non-vehicular traffic can fluctuate greatly in quantity and in composition: it includes people, wheelchairs, strollers, pets, bicycles, bike trailers, bags, parcels, and wheelbarrows. We could very much use additional deck and cabin space to accommodate these riders and their gear.

Regarding question (5): I believe that an hourly fare structure would not be a fair or effective means of changing ridership patterns on this route. Please ensure that any such change would be vetted with rider polls and public hearings. I caution against assuming its efficacy for vessel planning.

I really appreciate the work that Art Anderson and Elliott Bay have done to define our options, and I hope that my recommendations will help strengthen the position from which we decide the fate of *Guemes* and its successor. Whatever your decision, I look forward to crossing the Guemes Channel with you for decades to come.

Sincerely,



Brent Morrison

Rachel Rowe

From: Brent Morrison <skagitrecording@yahoo.com>
Sent: Thursday, April 03, 2014 6:00 AM
To: Rachel Rowe
Subject: Guemes Ferry Replacement Information?

Capt. Rowe:

Thank you for commissioning a replacement study for the Guemes ferry and for giving the public an opportunity to think about it. I'm a frequent rider, so it's an interesting topic to me.

EBDG's replacement report has turned me onto some other interesting reading in the references. Are you able to distribute the Art Anderson lengthening report and tabulated ridership going back as far as 1979? If so, may I please obtain them from you? From what I could tell, they are not available on the web site.

Best,
Brent Morrison
1109 3rd St.
Anacortes

Rachel Rowe

From: Rachel Rowe
Sent: Tuesday, May 27, 2014 7:30 PM
To: 'J. Robert Henderson'
Subject: RE: Ferry Replacement Repoert

Robert,

This is no problem. I will add these remarks to the others we have received. Thank you for your input. I will be publishing responses to everyone's questions sometime in June, 2014. It is very likely this will happen during the second half of the month.

Sincerely,

Captain Rachel Rowe

Ferry Operations Division Manager
Skagit County - Guemes Island Ferry
Terminal - 500 I Ave. Anacortes, WA 98221
Office: (360) 419-7618 Cell: (360) 333-1496
rrowe@co.skagit.wa.us
www.skagitcounty.net/ferry

From: J. Robert Henderson [<mailto:heanruig@gmail.com>]
Sent: Saturday, May 24, 2014 5:07 PM
To: Rachel Rowe
Subject: Ferry Replacement Repoert

I apologize for not submitting the following remarks about the ferry replacement report before the official deadline. We were absent from this area for a considerable time, and then I had a computer problem that made it impossible to access the replacement report until recently, so I hope you will consider these comments, even though they did not meet the official deadline.

There is very little discussion in the report about accommodating passengers. Most agencies dealing with other forms of transportation plan for moving people, not just cars. As you know, the State ferry system has gone to great length with separate, enclosed passenger loading at some locations. I would not expect anything like that for our ferry, but enhancing passenger access and cabin size and comfort—including heat in winter, merits more attention.

Eventually more parking will be needed. On both sides, land adjoining existing parking is not in its highest use and may well be available. I recognize that Skagit County has many demands on its funds, but various kinds of arrangements could be made for eventual aquisition.

Regarding the neighborhood issue, if that is still a problem, I wonder why the city doesn't apply more widely the same parking restrictions that now exist on sixth ave: parking by permit only—with an automatic permit to adjacent homes.

Regarding the backup of the ferry loading lane on Guemes Island, the loading lane was lengthened a few years ago, for that reason. If it is again a problem, it could be lengthened again. I believe there is adequate right-of-way.

Again, I regret that I was not able to submit these remarks in a timely matter.

Rachel Rowe

From: Martin S Taylor <mstaylor@fidalgo.net>
Sent: Thursday, March 27, 2014 3:53 PM
To: Rachel Rowe
Cc: orsini@cablerocket.com; acasper@cablerocket.com; gveal@cablerocket.com; Commissioners

Rachel,

Thank you for hosting the ferry meeting last night. It was well run and very civil, despite a clearly divided group and clear opposition to many of the proposals from the Elliot Bay Design Group. I found myself unpersuaded by Mr. Williamson's presentation, particularly after reading the Ferry Committee's well written response on Line Time. Although there are many issues to address, I want to focus on just one.

The issue of the ferry operating at near capacity seemed particularly disingenuous to me. And the one proposed solution of lengthening the *Guemes* to accommodate an additional 4 cars per run seems expensive and foolish in the extreme. This capacity problem has been created in large part by the change in scheduling of ferry runs. The new schedule of 30 and 45 minute sailing increments slows down moving larger volumes of vehicles and passengers. This becomes particularly evident on summer runs where high volumes of ridership occur. With crew and vessel available, simply running steadily would mitigate the longer lines and frustration experienced by ferry users who sit and wait while crew and vessel sit idle, waiting for the next scheduled run. I am not sure where this new scheduling approach came from, perhaps a negotiated item with the Inland Boatmans Union. But to keep the ferry moving with fewer breaks would move more people and vehicles. The addition of the 4th crew member during the summer months facilitates this approach, making pre-sailing ticket sales possible and streamlining boarding. On those days and hours when ridership historically exceeds capacity, I suggest running the ferry as a shuttle service, simply running steadily to keep up with the flow of traffic. Alternatively, continuing to operate without breaks when there is an overload would more than compensate for the ferry's capacity deficit. It would also be a good faith policy to ferry users who rightfully expect the ferry to operate first and foremost for the users.

Respectfully,
Martin Taylor