

Lummi Island Ferry Advisory Committee (LIFAC) Meeting

August 12, 2020

Via ZOOM (Mary Ross's account)

CALL TO ORDER

Rhayma Blake called the meeting to order at 6:02.

ROLL CALL

Present: Charles Bailey, Rhayma Blake, Cris Colburn, Jim Dickinson, Patricia Dunn, Judy Olsen, Greg Rice

Also Attending:

WCPW: Rich Hudson - Senior Master

Also: Bobbie Hutchings, Bob Anderson, Mike Skehan, Bill Fox, Mary Ross, Elizabeth Kilanowski, David Kershner

MOMENT OF SILENCE

OPEN SESSION (Comments follow minutes when provided)

- Riley Starks letter (following minutes) suggesting moving dry dock to spring was discussed. Rich supports this and is exploring in more detail. No LIFAC members are opposed to this change. It was suggested that dry dock be complete prior to Memorial Day weekend.
- Rich is developing a clockface schedule as suggested by Mike Skehan. This would be implemented after the Covid schedule. It may be available for the Sept meeting.
- Bill Fox encouraged Public Works to examine the design of a new ferry in Texas. It has a gate that may prevent water from coming over the fore end of the ferry.

APPROVAL OF JULY 9, 2020 MINUTES:

Charles moved approval and Cris seconded. Motion passed unanimously.

LIFAC INTERNAL BUSINESS

- Pat reminded the group that 3 positions expire in January. It's time to recruit candidates for LIFAC 2021.
- Bill Fox offered LIFAC use of his Zoom Account.

OLD BUSINESS

Update on Operations-Rich Hudson, Senior Master

- Ferry website has been updated
- LI parking lot is closed Aug 22-28 for maintenance. Anyone left will be towed.
- Dry dock parking at fish plant (Gooseberry Pt) will be available as last year. The manager also told Rich that seafood is available for purchase (flyers available at Islander).
- Dry Dock Passenger and Van policy discussed. The draft will be available Thursday August 13 for public comment for 2 weeks. Mike Skehan has agreed to post a poll on NextDoor to get an idea of potential foot ferry and shuttle usage during dry dock. Daily passenger ferry usage may be posted on the Ferry website so islanders have an idea of ridership and can plan accordingly. It was also suggested that procedures for those with symptoms be made available. Bob Anderson, chair of the Lummi Island Health and Wellness committee suggested more frequent

sailings.

- Theo White is practicing running the ferry and is doing well.
- COG will be “heavily funded.” Details are unknown at the time. Roland will be working with Cassandra on grant opportunities.
- Jim’s letter re: ferry design was discussed (attached). Cris stated he is not interested in redesigning ferry. Pat echoed Cris’s position. Rich has forwarded Jim’s suggestions to Assistant Director Elizabeth Kosa.
- Pat presented a summary of the Funding Workgroup meeting (attached). It was noted that political and community support is critical. Rhayma will check in with LI’s district rep Ben Elenbaas as he did not attend the meeting.
- Rhayma will check with Todd Donovan on a ferry update to the County Council.
- It was noted that neither Doug Erickson or Luanne Van Werven have provided letters of support for a new ferry.

Meeting adjourned at 7:47pm.

Letter from Riley Starks:

Drydock Letter

Dear County and Ferry Committee,

I am writing about the timing of our annual drydock schedule. When I first came to live on Lummi Island, in 1992, drydock was a short inconvenience each May. May is a great time for drydock, because the weather is good, and visitors have not yet begun arriving in significant numbers. I would like to offer the following arguments in favor of returning to the May drydock schedule:

1. Both dates affect school children and commuters equally.
2. Tourists normally visit towards the end of May into the summer. I realize that the emphasis for our ferry schedule leans toward our island residents and does not try to make it easier for tourists to visit. But consider this: None of our island businesses can survive on resident islanders only; not the Islander Store, the Beach Store Café, nor the Willows Inn. The many air bnbs that have sprung up in the past several years are also hard hit. In the rest of the San Juan Islands, September tourism numbers are equivalent to July; on Lummi, September numbers abruptly sink to February numbers.
3. 55% of the revenue for the Whatcom Chief is raised by ferry fares. Since ridership plummets during drydock, so does the much-needed revenue.
4. Reefnet fishing, which is an island treasure, is made very difficult during drydock. Our pink salmon runs largely arrive in late August and early September, and our coho in late September, making deliveries difficult and sometimes impossible unless we are lucky enough to get a tender out on the water. There is no reefnet fishery in May.

Unless there are other compelling reasons for having switched the May drydock to September, I see no advantage and only disadvantages for keeping the September schedule.

Thank you, Riley Starks

Questions from LIFAC Members and Answers from PW:

James M. Dickinson
2094 West Shore Drive
Lummi Island, WA 98262
(360) 296-3940

7/14/2020

Proposed Lummi Island 2020 Ferry Design Questions, Issues/Concerns

Q1. Hull

Aa. **Inefficient Hull? Old Ferries *Whatcom Chief* and *HIYU* are much more efficient.** Supporting Data: Both these 1960's Ferries are proven to be extremely seaworthy, maneuverable and fuel efficient. Either a lightened, properly dimensioned, lower profile hull of the *HIYU* or an enlarged, modified, hull platform of the *Whatcom Chief* would be much more fuel efficient than the "**NEW**" proposed vessel while maintaining excellent maneuverability and seaworthiness.

Ab. **How much fuel per day is estimated for this vessel?**

Ac. **Low draft design appears to increase fuel use of this Vessel?**

Supporting Data: It appears that one of the designers criteria for the Vessel's hull was to keep a low draft profile, which also appears to facilitate vessel rolling. In reality this is not necessary as the water depth at a -3 tide is 12 feet, as measured by a reliable local person, at the outside of the apron on the Lummi Island side. It is deeper on the mainland side due to the greater repose angle of the beach. The result if this "low draft" effort, appears to be excessive hull drag, evidenced by 750 Hp needed to propel it to 10 Knts, in single (push) engine mode. In contrast the 1962 *Whatcom Chief* actual use is 220Hp, and the 34 car "Dreadnaught" (1967) *HIYU*, uses 345Hp. Both of the "old" boats are shorter, than the proposed vessel, and it is well known that longer vessels take less energy than shorter boats at a given speed and will, at the same Hp, actually go faster. Therefore the new hull appears to be far less efficient. **Solution**, Better designed deeper hull, with larger, more efficient propeller. (1)

Ad. **Cat C18 engines appear too small?**

Ae. **What 6 cylinder engines have 715Hp Rating?**

Supporting Data: The power rating of the proposed Caterpillar C18, six cylinder, Tier 3, is 600Hp @1800rpm. With the proposed hull design the single "push" engine requirement will be 125% of its output power at 10Knts. This will greatly shorten the engines life, with much more often rebuilds/replacement. The core engine of the C18 only differs from the existing *Whatcom Chief* 3406 250Hp engines, with a slightly bigger bore for a bit more displacement. The increase in power of the Ci8 is due to much higher turbo boost, or forcing more fuel/air mixture into the cylinders. As the base engine is nearly the same, the engines will not last nearly as long at the higher horse power out put with usual use. This increased wear factor also applies to any other similar sized six cylinder engines. While some relief on initiating the particular run may come from the proposed battery assist, or augmentation by the pull engine, either will result in higher fuel use and resultant higher carbon emissions than a larger diesel engine, due to operating the second engine and/or the battery charging

losses of the electrical section, **Solution;** A better engine solution is the larger C32 tier III 800 HP V12 engine, which

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has four times the longevity of the C18, or the best solution, the new C32 800Hp @ 1200 rpm which will more than double the longevity of the 1800rpm C32 engine, which would result in 6 times the engine tenure, minimum, v/s the proposed 6 cylinder units.

Af. No Rudder and Propeller protection?

Supporting Data: Outside end of the propeller shaft is attached via a vertical strut, and rudder is solely attached on its upper end. Keel structure ends about 19 feet from the outside of the rudder, about 14 feet from the propeller. Unlike other work vessels, (*Whatcom Chief, HIYU, Christine Anderson, STII*, etc) the design has no lower support or protection from grounding for these items. Almost all other vessels, have a metal lower support, know as a Keel Shoe which is supported by end strut(s) connecting to the hull to help support and keep groundings from damaging these parts. This longer vessel will be less responsive in high winds and cross-tides than the *Whatcom Chief*, and under those conditions more likely to ground than it.

Even so,

in its tenure, the *Whatcom Chief*, has grounded around 10 times, with a least two requiring a trip to the shipyard, that I know of. As the proposed vessel has controllable pitch propellers and hollow shafts, the damage could be extremely expensive with long delay times in getting the replacement parts. This is a similar to the **WSF KDT Ferries** that run at Keystone/Port Townsend. They have grounded at least four times, two caused extensive damage. One event cost over 2 million dollars to repair, with 2 months of time and revenue lost in the middle of the High Season. Shaft and propeller parts had to be gotten from Norway. **Solution;** Extend keel structure to right behind the propeller, like *Whatcom Chief, HIYU, etc*, install keel shoe and support struts.

Ag. Center of Hull extends too near the ends, may cause vehicle spraying? .

Supporting Data: This puts the water shear of the lower center of the vessel bow, in forward direction, on the same vertical plane as the hull, which will then splash up and over the apron onto the loaded vehicles. Spraying is a problem of the *old Whatcom Chief*, it sprays cars very well to the point of some wags calling it the "Submarine". This also causes lower chassis corrosion to the customers vehicles, rusting bumper /supports, brake lines, etal. **Solution;** Shorten center of hull about 2 feet, per end, leave deck apron as designed which would have the deck projection above end of hull. This will help to control the up spraying and protects vehicles.

2. Deck and Superstructure.

D. Deck and Superstructure

Da. No provision for future growth of carried vehicle demand?

Supporting Data: It appears one of the driving reasons for the size of the deck platform was driven by the width of the local repair Dry-Docks, which resulted in the designers settling on a 54 feet width and four lineal car lanes to achieve the 34 car load goal. The narrowest possible Dry-Dock in the local area is Lake Union Dry-Dock, in Seattle, with an entrance door of 59 feet and then 62 feet width inside. Therefore

the proposed vessel's width could be expanded about 3-4 feet to 57-58 feet wide and will still fit there, all other applicable facilities are wider.

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There appears to be already enough deck space (width) on the right side (Passenger Space on left) of the proposed vessel, for a 5th lane, however, it is covered with auxiliary structures. At the proposed 180 feet long and 54 feet wide, the vessel is at just about maximum length for usable handling on the route during inclement weather conditions. Further lengthening the hull to gain car capacity, would make it extremely unwieldy especially in times of larger tides and wind. To make the vessel wider, after construction, is excessively expensive and therefore the vessel, as it is envisioned, is at maximum car load, and would have to be replaced with a larger vessel when growth occurs. Using the value of today's dollars, projected pricing of the proposed 34 car Ferry is 15 million dollars, a larger 50 car vessel would be about 18 million. To extend the enhanced/proposed boat by 3 car lengths from a 5 lane 34-35 car base to a 50 car vessel, will be about 3 million dollars at today's prices, for a projected total of 18 million, rather than 33 million to build this boat and replace it again with a larger one.. With the current local real estate trends and near complete home sales in Whatcom County, the need to replace or upsize the vessel appears to be in 10 to 15 years, well within the life/age expandability of the vessel.

Solutions: DSa. **Shorten the vessel** by one car length, **add 3-4 feet width.**

DSb. **Relocate Crew space and Restroom**, stacks, vents, locker, **etc** to open up additional 6 (right) car lengths meeting 34 +/- car goal..

DSc1. **(Opt 1) Stacks, vents** and right stairways, **may be relocated through {left} passenger space, similar to Texas Port Aransas Ferries.**

DSc2. **(Opt 2) Stacks, vents** and right stairways, may be directly connected to **inside thin right side bridge support**, , **leaving** enough lane **width for Car passage**. Bicycles, Motorcycles, and **narrow Cars** may be parked **by stacks, vents, stairs etc**, as long as **car door ingress/egress is not impeded.**

DSd. **Relocate Crew Lounge and Head to lengthened**, **above passenger Space**, inside **Pilot House Bridge left support** structure.

DSe. **Passenger space may be lengthened, if needed.**

DSf. The **later addition of three car lengths** will **result** in an **expanded 50 car vessel**, as needed in the future, at far less cost than having to later build another larger replacement Ferry.

DSg. **Ballasting as needed** can be done by placing the Hybrid Batteries as needed.

DSg. The above **design modifications** are **intended to complimentary** to the **"New Ferry" design.**

3. Landings:

La. What is the proposed width for the revised Docking Slips?

Supporting Data: **Docking slips** need to be **wide enough** to land any of the **"smaller" Ferries in Sound for possible emergency/replacement service.** The widest of this fleet are the Pierce County Ferries **Steilicomm II** at 68 feet wide and

Christine Anderson at 66 feet. The smallest of the WSF Vessels are the 3 **KDT** class 64

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car vessels (Port Townsend/Keystone) at 65 feet and the privately owned former WSF **HIYU** at 62 feet wide. The provision for the WSF 64 car boats would only be for emergencies in the case of a very large flood event where the Lummi Reservation is cut off and the Ferries have to carry both Lummi Islanders and those on the mainland. At 68 feet wide (**StealicoomII**), the ability to land even the widest of these vessels would not negatively affect either of the existing or proposed new vessel, the widened slips would not be that wide, no more than 5-6 feet of open space per side, and the narrower boats can easily land there.

Lb. Will the revised Docking Wingwalls accept the WSF type Ferry Bows?

Supporting Data: Vessels with State ferry Type bows are the *New Guemes* Island Ferry, **SteilicoomII**, **Christine Anderson**, **HIYU** and the three WSF 64 Car **KDT** Ferries.

Lc. What existing pile structures and materials are to be reused?

Conclusion: The above questions and their supporting criteria and solutions need to be well discussed and vetted. With the New Vessel and its support facilities, we cannot look to a short term solution and must allow for future growth. If we do not, we are likely to get something that is inappropriate, or problematic. A good example of this is the hastily acquired Washington State Ferries **KDT**, Port Townsend/Keystone vessels built 2010-2013. They do nothing well for the route. They do not carry enough cars, burn twice the fuel of their similar sized predecessors, don't handle well, have unprotected rudders and propellers (see above) and take much more maintenance than they ought to. We do not want to make a similar mistake, our boat has to be an excellent choice.

To build a un-expandable vessel, and have to replace it, in the far too near future, is fiscally irresponsible and will be political suicide for the island. We need a path toward the future. If there is no need to expand the vessel in the future, it can remain as built and continue to serve without being expanded, As you can see from the above suggestions, do not require extreme changes, but are of, general adjustments, that will either make no impact or enhance the vessels utility.

My intent is to do the best job of acquiring the most efficient and cost effective Ferry for the Citizens of Lummi Island and greater Whatcom County.

I expect there will be a good degree of near tem discussion about this. I am available for further comment at audidancer@hotmail.com and (360) 296-3940

Sincerely,

James M. "Jim" Dickinson.

From: Charles <baileychasr@gmail.com>
Date: July 14, 2020 at 1:56:01 PM PDT
To: LIFAC <lummiferry@googlegroups.com>
Subject: [LIFAC] Bailey questions on the Elliott Bay Design Group new ferry documents

Dear Rich,

At our July LIFAC meeting you asked for questions from members before a Wednesday, July 15th deadline. Here are my questions, keyed to the written comments I made earlier on the EBDG drafts. I've attached the comments for ready reference.

1. Will the table shown on page 1 be revised to include the propulsion electric motors and batteries and their characteristics, to the same level of detail as the diesel engines in the same table? Same question for the text on page 8—will it be revised?
2. Will the EBDG text I cite at the top of page 2 be revised to make it clear the boat is to be designed to accommodate full-electric propulsion or a better new technology, at a later date?
3. Can the text on page 8 also explain why connecting the alternative propulsion source (electric motors or other) at right angles to the reduction gear is a sounder solution than putting it in line?
4. Since the new ferry is to be constructed with adequate space and layout to accommodate future battery capacity for full all electric operation, can EBDG indicate the battery characteristics on page 12?
5. Will EBDG clarify the text on pages 12-13 (details in my comment)?
6. Can the revised drawings for the new ferry show the location of the propulsion electric motors in relation to the diesel engines and the reduction gears?

Finally, I'll make the obvious point that whether future technology development leads to fuel cells or batteries charged from the shore, the propulsion energy to get to carbon neutral is electric energy. However this plays out, it would seem prudent for the county to ask EBDG for more details about the electric motors in the final version of the concept design.

Our mantra? "Build it so there's no backtracking!"

Thanks, Charles

WCPW Response to LIFAC Vessel Design Questions 7/22/2020

Aa. Inefficient Hull?

The vessel is designed with an efficient hull. The “parent” hull form has undergone optimization and the final hull form will go through additional optimization before the design is completed.

Ab. How much fuel per day is estimated for this vessel?

Conservatively: Approximately 220 gallons/day. Depending on final engine selection this could be less than 200 gallons/day.

Ac. Low draft design appears to increase fuel use of this Vessel?

The increased fuel is the product of the larger sized vessel. However, the low draft is a product of the draft constraints. The vessel’s draft is optimized with these constraints in mind.

Ad. Cat C18 engines appear too small?

Final engine selection has not been made however the C18 is an adequately sized engine for this vessel design.

The C32 engine is also possible. However, concerns with selection of the C32 engine are:

- Significantly more expensive in capital costs.
- Significantly larger in size and takes up a lot of physical space within the engine room. This could affect the tonnage and framing requirements for a 100-ton vessel design requirement, as laid out in the resolution.
- Service intervals are reduced, but the service is more expensive.
 - o Engine rebuild and overhauls are significantly more expensive.
- A life cycle cost analysis will be performed to determine the best engine to select.

Ae. What 6 cylinder engines have 715Hp Rating?

We are not aware of any 6 cylinder engines that have the ability to run at 715HP continuously. The “continuously” factor is a requirement of the vessel design.

Af. No Rudder and Propeller protection?

The skeg is designed such that it reduces drag. The shaft will be protected by shaft alley and strut.

Ag. Center of Hull extends too near the ends, may cause vehicle spraying?

The deck above the waterline is approximately 12” higher than the chief fully loaded. EBDG is looking at the effects of water over the deck and will get back to WCPW.

Da. No provision for future growth of carried vehicle demand?

The design of the vessel meets the Level of Service Resolution which is a 34 car vessel. The WCPW business requirements for operations and maintenance call for ample engine room access and crew spaces. The current design meets all of these criteria.

La. What is the proposed width for the revised Docking Slips?

The terminal modifications are designed to optimize the size of the new vessel. These modifications are limited to the footprint of the terminal areas, including the tideland lease with Lummi Nation. The current design meets all of these criteria. The intent is that other “smaller” vessels (like the Guemes Island ferry) in an emergency could be used.

Lb. Will the revised Docking Wingwalls accept the WSF type Ferry Bows?

The docking wing walls can accept some WSF ferry bows, however, the span between the dolphins do not accommodate for enough width. Regardless, all WSF vessels would be very challenged to dock at our terminals because of the tide/draft restrictions. Additionally, the resolution did not outline accepting WSF vessels as a requirement. Any modification to the tideland lease for a wider berth is currently not available.

Lc. What existing pile structures and materials are to be reused?

WC has requested from KPFF, to the greatest extent possible, to maximize the re-use of the existing structures, however this design work is not complete.

1. Will the table shown on page 1 be revised to include the propulsion electric motors and batteries and their characteristics, to the same level of detail as the diesel engines in the same table? Same question for the text on page 8—will it be revised?

This is an outline specification; the final design specification will include all of the detail you are requesting.

2. Will the EBDG text I cite at the top of page 2 be revised to make it clear the boat is to be designed to accommodate full-electric propulsion or a better new technology, at a later date?

A sentence will be added to the outline specification that notates the vessel will be designed to accommodate future carbon neutral technology, for example full electrification.

3. Can the text on page 8 also explain why connecting the alternative propulsion source (electric motors or other) at right angles to the reduction gear is a sounder solution than putting it in line?

With the in-line configuration, in the event of a motor failure the vessel would have to be removed from service for repair for a significant amount of time. With the right-angle configuration, the down time and the need to take the vessel out of service for repairs is significantly reduced or eliminated.

4. Since the new ferry is to be constructed with adequate space and layout to accommodate future battery capacity for full all electric operation, can EBDG indicate the battery characteristics on page 12?

EBDG will add language to the outline specification that's states something like: "the engine room space will be built with enough capacity to accommodate the batteries needed for full electrification."

5. *Will EBDG clarify the text on pages 12-13 (details in my comment)?*

The ferry is being designed to accommodate future options. The vessel's existing performance requirements will be addressed at the time of retrofit.

6. *Can the revised drawings for the new ferry show the location of the propulsion electric motors in relation to the diesel engines and the reduction gears?*

EBDG has updated the engine room drawing in the outline specification, see the attached updated drawing.

[LIFAC] Expandable Ferry Option

Jim Dickinson

Wed, Aug 12, 11:55 AM
(1 day ago)

to LIFAC [Unsubscribe](#)

1. Modified from Draft Ferry Plans.
2. Existing design is at maximum length for maneuverability, cannot be expanded, would need to be replaced with future growth.
3. All functions and spaces and space sizes maintained in modified format.
4. General Vessel Configuration Maintained
5. Widened 4 feet to 58 feet, will fit all now usual Northwest Dry-Docks
6. Shortened by one car length, pays for modifications to original design.
7. Wider, shorter vessel will be more maneuverable and expandable, Existing new design is not expandable.
8. Adds 5th Car Lane
9. Moves Crew Lounge and Head to above Passenger space into an expanded Pilot House Support. As proposed, Crew space is in some of the most expensive real estate in Whatcom County. As car spaces, may return at least \$400.00 a day in high season,
10. Puts lockers stacks, vents, stairs, ext, toward out side {North} rail structure.
11. Optional inside passenger space stairway to accesses crew spaces, and below decks, engine room.
12. This allows the expandable boat to be enlarged for future growth, up to approximately 50 cars.
13. COST TO EXPAND VESSEL, TO 50 CARS, \$3 MILLION, COST TO REPLACE FERRY WITH 50 CAR REPLACEMENT, \$18 MILLION AT TODAY'S DOLLARS.
14. Writer projects a larger 50 car ferry will be needed within 10-15 years, well within its lifespan, based on local real estate sales, demographic changes with people fleeing cities, and Internet work from home options. 2007 Anderson study projected the not procured 35 car 2008 ferry would need replacement by 2017.
15. To purchase the "unmodified" design is fiscally irresponsible, looking to the future.

Jim Dickinson 360-296-3940

Ferry Funding Work Group Summary July 29, 2020

Highlights:

- There are two major changes looking ahead:
 - Ability to fund via a Ferry District is very unlikely
 - Road Fund funding would be very difficult/unlikely
- CRAB funding is not a given considering the current fiscal environment

Suggestion:

Wait for BUILD Grant decision and next legislative session before moving forward.

- BUILD Grant is excellent and has solid support. Does not require a local match.
- CRAB applications are due this fall.
- Additional grant opportunities may become available.
- If upcoming CRAB funding cycle is missed, 2026 funding would provide a ferry before the 2029 ferry dry dock. The ferry reaches functional obsolescence in 2029. This would require a \$4m+ dry dock to replace the engine and more. Dry dock would take 2-3 months. Not weeks. Months.
- A 4 year delay could provide a benefit regarding carbon neutral goal.