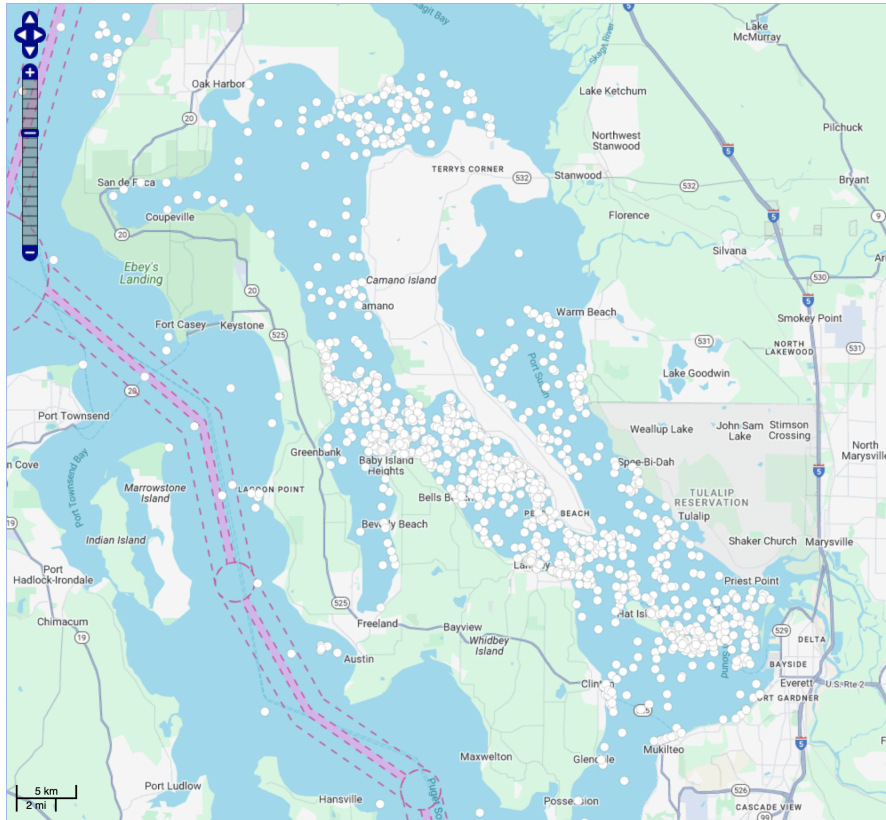


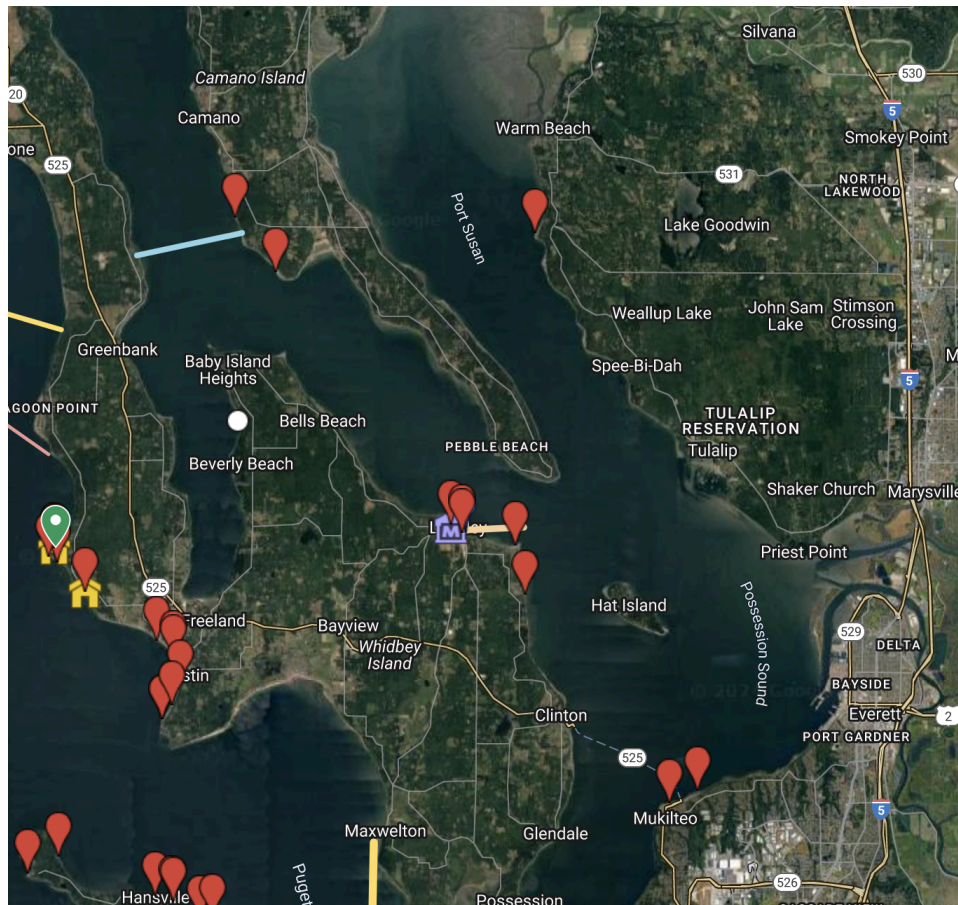
# Prospective hydrophone sites - Possession Sound & Saratoga Passage

Where could we listen 24/7 for gray whales in WA?

All Cascadia sightings of gray whales (all years, all months):



Prospective sites (as of Feb 2024):



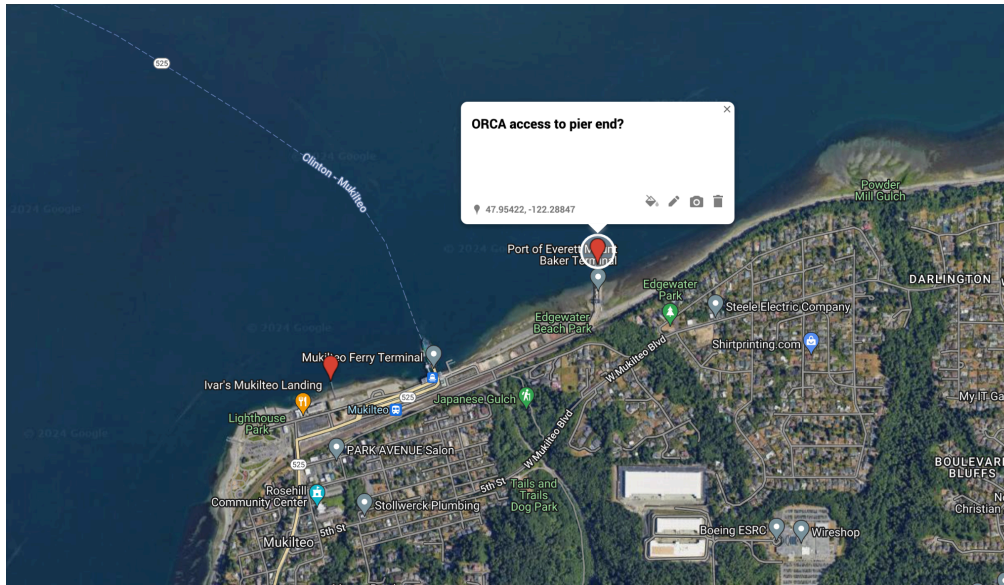
## Possession Sound

### ORCA hydrophone (north Mukilteo)

Hydrophone located at the end of the pier just north of Mukilteo?  
Soundtrap?

[Map guess:](#)

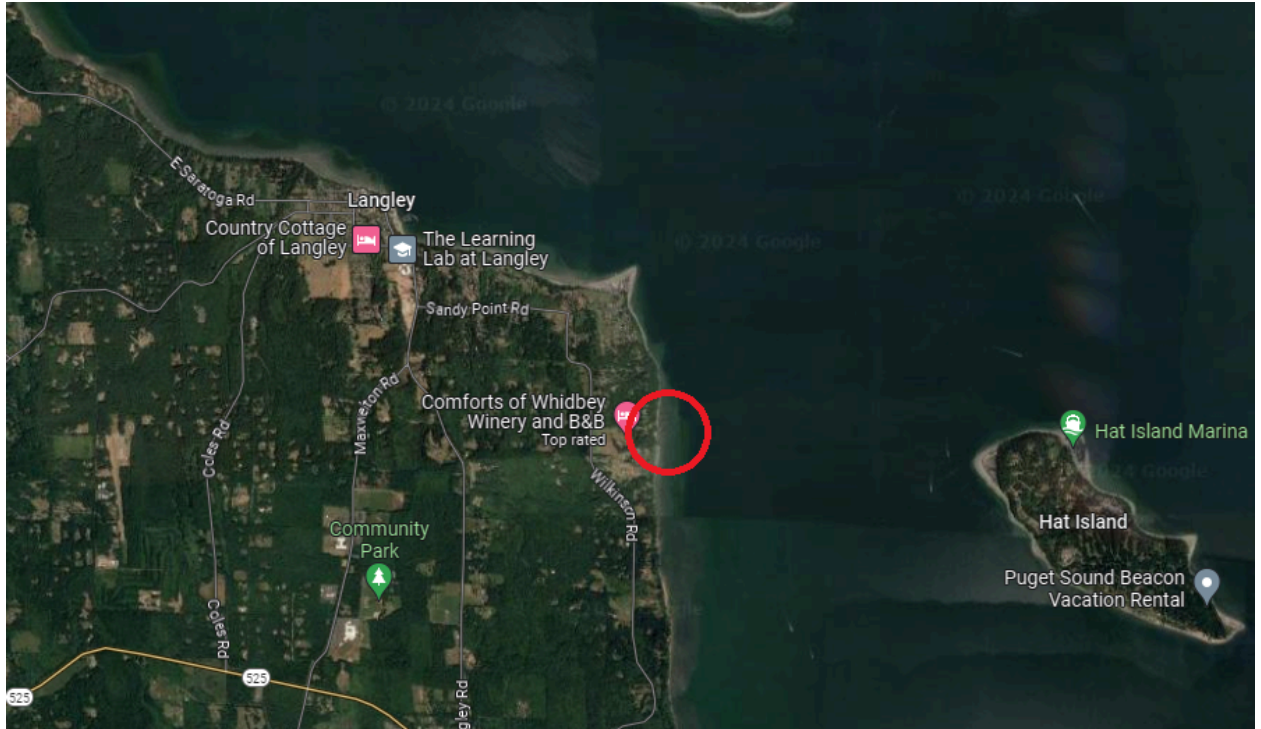


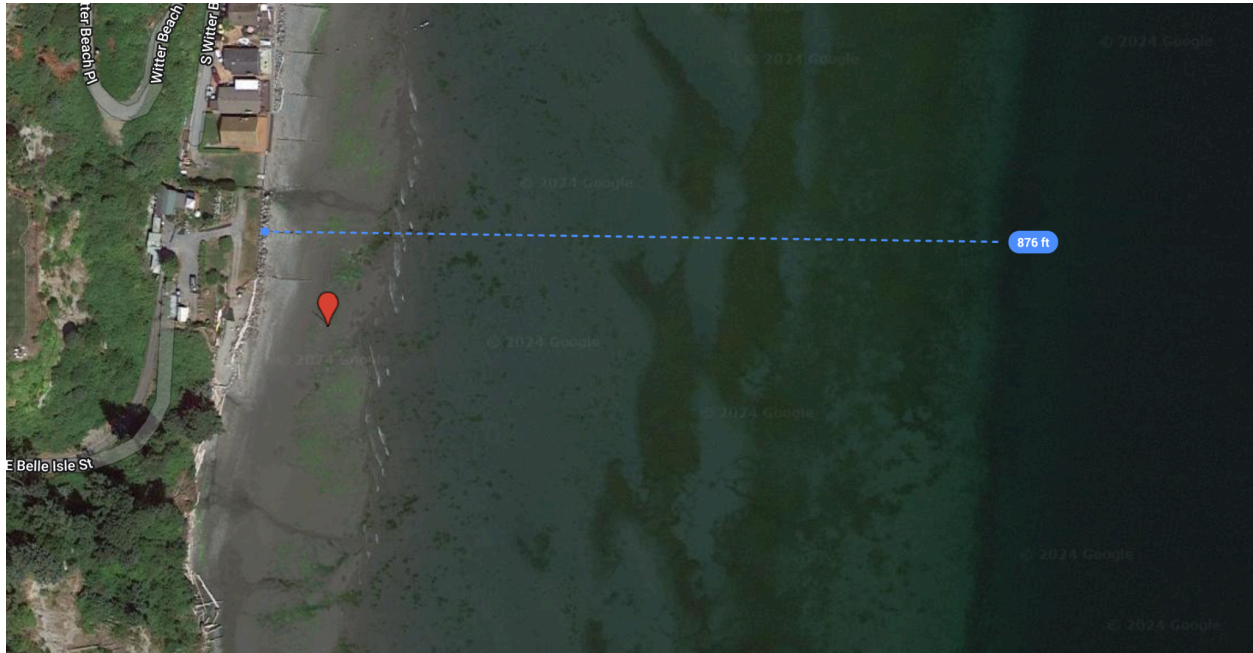


## E Belle Isle St. home

Trevor Feb/Mar 2024 email: An Orca Network volunteer says: Their neighbor currently maintains a piling that they installed as an eagle perch in the mud flats in front of their property. They frequently have gray whales feeding in this area on high tide. The location is nicely positioned near Hat island and has the possibility of capturing audio from Possession Sound, Saratoga passage, and the entrance to Port Susan.

Two things to note about this location, the pole does become fully exposed at low tides & one of the neighbors frequently harvests ghost shrimp in the area with a loud pump. Let me know what you think about this site. I'm still in the process of discussing this with the volunteer to gauge the interest of her neighbor in hosting a hydrophone, so at this point, it's speculative.





## Saratoga Passage

Trevor: there are existing web cams at the marina and Cascade pizza up the hill by WhidbeyTel we can link/partner with a new hydrophone location.

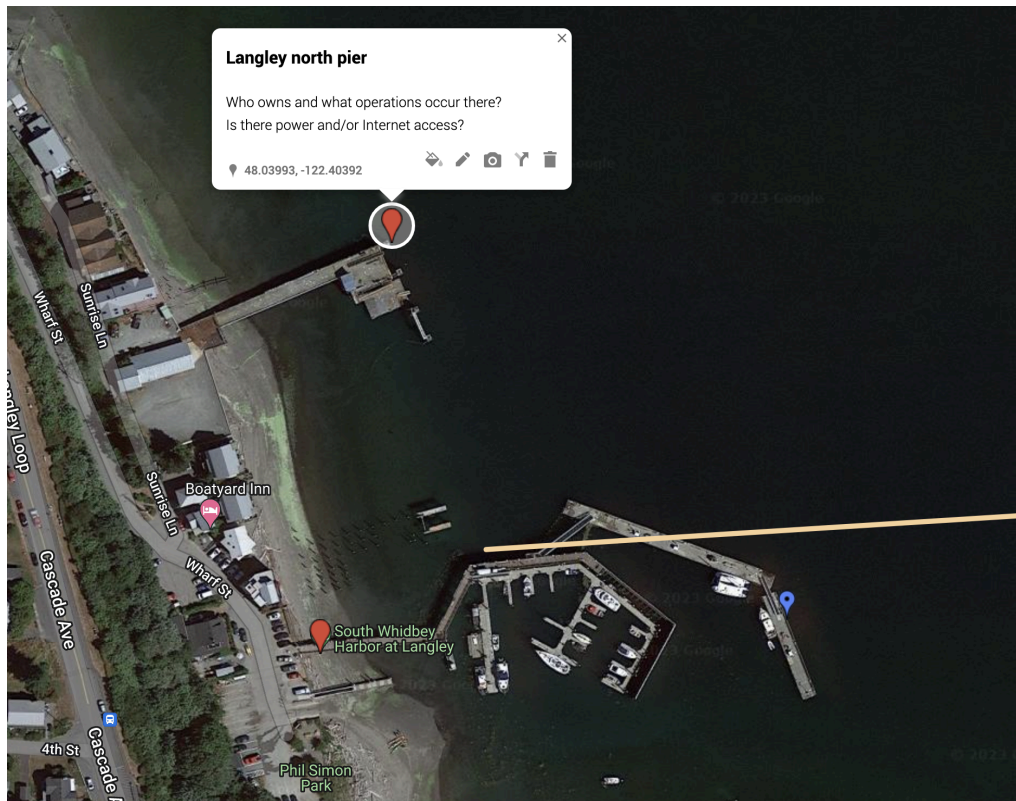
### Whibey marina

- ☐ Is there internet access in booth?
- ☐ How deep is it under the booth (e.g. if we just dangle through the floor)?



## North pier

- ☐ Who owns and what does access look like?
- ☐



## Holmes Harbor

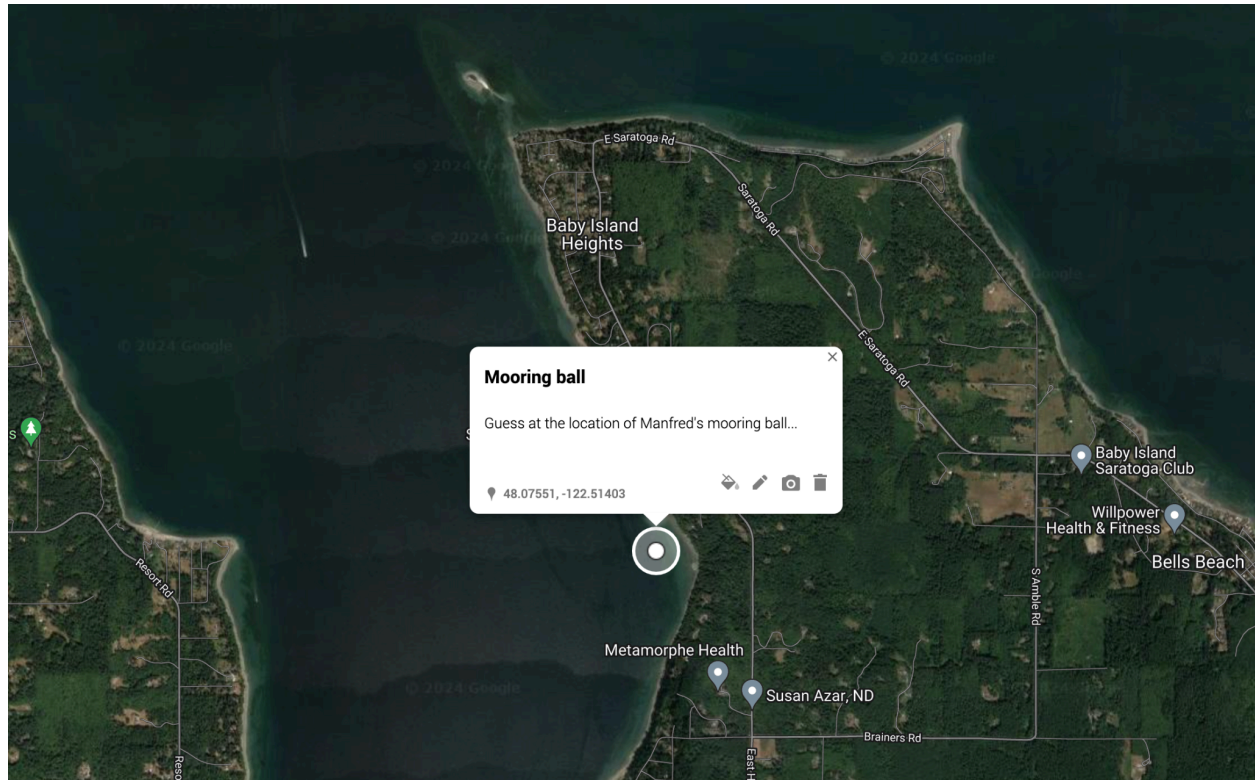
### Manfred's mooring buoy

3704 Emmet Place on the eastern shore of Holmes Harbor.



MANFRED BARTZ <[mkbartz@msn.com](mailto:mkbartz@msn.com)>  
425 422 2471

From email: I looked up this address and it's pretty far into Holmes Harbor, so not very good for orcas...



# Sunset Beach Wharf

Host: [Summer Camp at Sunset Beach](#), Jeffrey Thomas

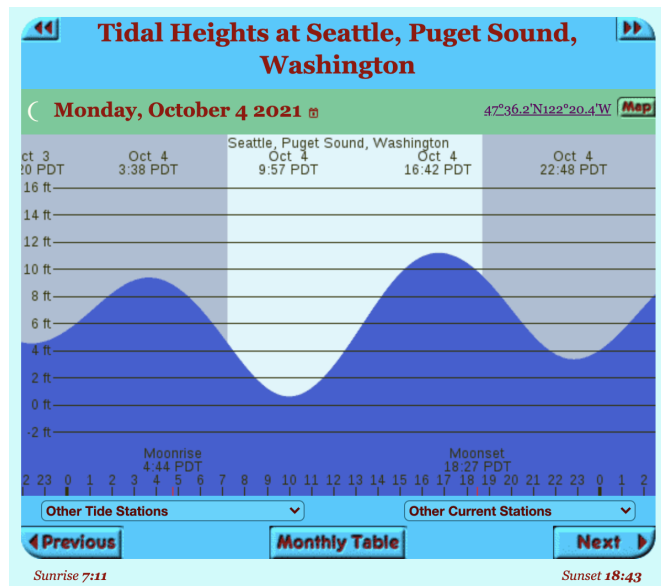
## Deployment chronology

1. Initial site visit Scott
2. Initial site visit Dave
3. 10/3/2021: Initial deployment (Jeffrey, Wyatt, Vanessa, Scott)
4. 11/28/2021: Failure of SQ26-08 hydrophone after ~2 months

## Questions

- How deep vs close is optimal?
  - What is depth at outer end of gang plank?
  - How often is it exposed (Jeffrey said dry at zero tide, ~10ft sand at -2' tide?)
  - Is hearing kids splashing in the summer a good thing, or not?
    - Kid noise minimal at night and in months outside of mid-June to early Sept
    - SRKWs are mostly non-summer visitors in Possession Sound (9/9 was first visit in 2021)
  - Idea: try shallow/simple first; add more expensive longer cabled solutions in summer 2022 as a camp project if deemed necessary.
    - Joe's 100' routed 10' down, then straight out ~90'
    - Lon's 40' routed 10' down, then 30' straight out? Or keep coupling out of water by going 10' down then 10' straight out.
    - Put both in green box under gang plank
    - OR: put Joe's in green box just inside closest room, run 60' out gang plank, 10' down post, and 30' straight out to pier block mooring (single element for winter 2021-22?)
- Where are power and ethernet router?
  - Dave says wireless router is  $\frac{2}{3}$  down southern building/rooms towards the Sound up high, outdoors, under an eave.
- Who should host/maintain?
  - Beam Reach (closest site to Scott's home office/shop, so good for experiments)
  - Sunset Beach Camp
  - An orca-focused 501c3?
    - Orca Network
    - Whale Scout
    - Orca Conservancy
- What's best day to deploy (via snorkel and/or kayak/sup) in fall 2021?
  - Daytime low tides:
    - Last week of September ops?

- Sun or **Mon Oct 3 or 4: mid-morning 0.7' tide**



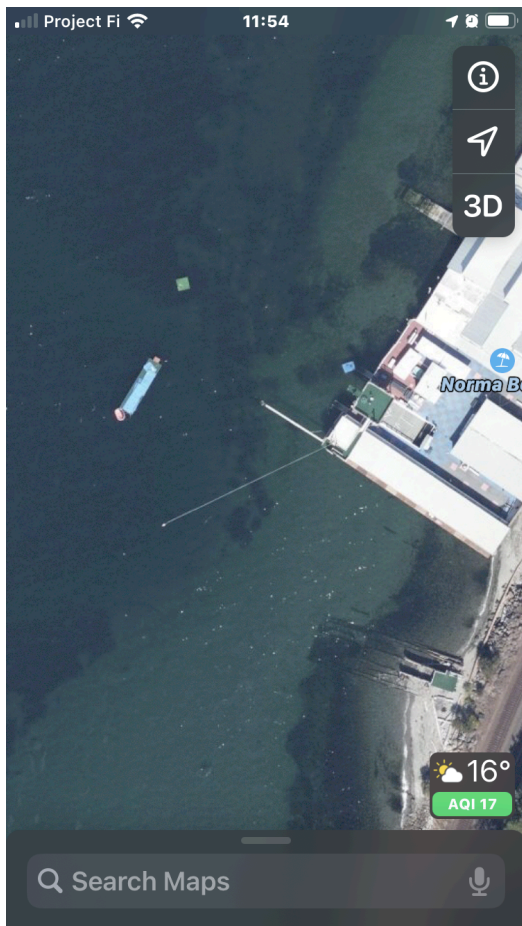
## Opportunities and constraints

- Advantages
  - Existing dock with AC power and fast Internet
  - West corner extends well beyond low tide
  - Marine Mammal Academy with enthusiastic, talented staff co-located year-round
  - Lots of educational/outreach opportunities!
  - >~5 km from nearest ferry route and shipping lane
  - No nearby marinas (sources of boat noise)
- Disadvantages?
  - Proximity of train tracks and observed underwater noise increase as train passed (from ~107 dB broadband receive level to ~128 dB; ~21 dB increase).
  - Possible surface/dock noise during rain events or regular use? But we could use longer cable to get deeper/farther. And/or it could be educational for kids to hear the sounds they make underwater (e.g. throwing pebbles in or listening to stones hit the sea floor?)
- Bandwidth
  - [Speed test procedure](#)
  - = Mbps Down
  - = Mbps Up
- Distances & depths
  - = Ethernet cable (router to room on west (& south) corner of pier)
  - 15m (50') = length of catwalk
  - Depth estimates (from Wyatt? Or did Scott measure?)
    - ~1-3m (5-10') = depth below MLLW at W corner of pier
    - ~3-5m (10-15') = depth below MLLW at end of catwalk / gang plank

- Depths & distances from Jeffrey call (9/23/21)
  - (50-60') = depth past the big floating platform (see satellite view from Apple maps below)
  - 40x10 floating platform
  - SNUBA has up to 200' hoses
  - Depths at 0 tide
    - 15' Zipline float
    - 6' Green dock
    - 30' Blue float

## Site images, charts, and other data

It's about 60' from end of gangplank to big floating platform (which is about 50' long, per next Gmap screenshot)...





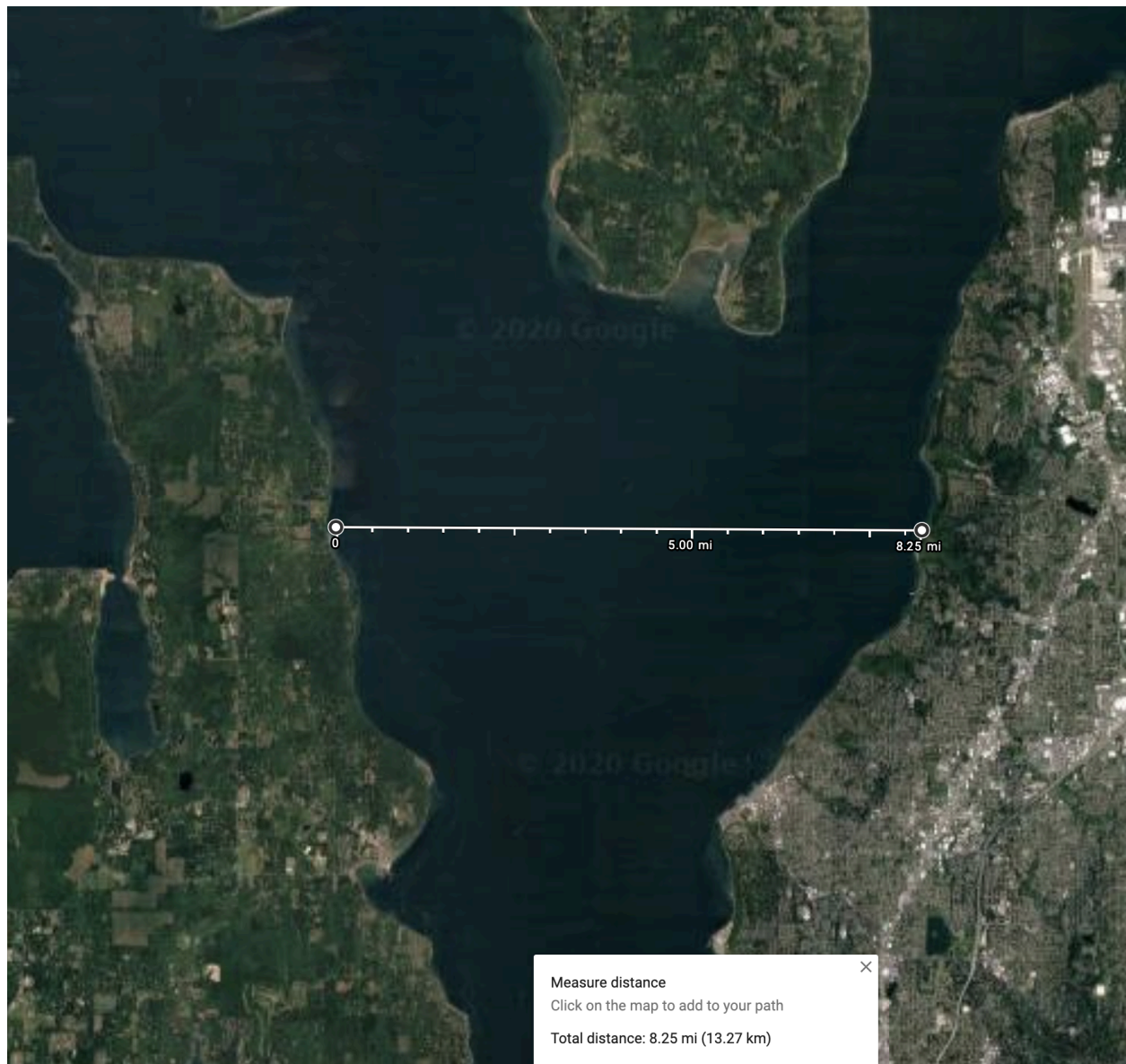


Measure distance

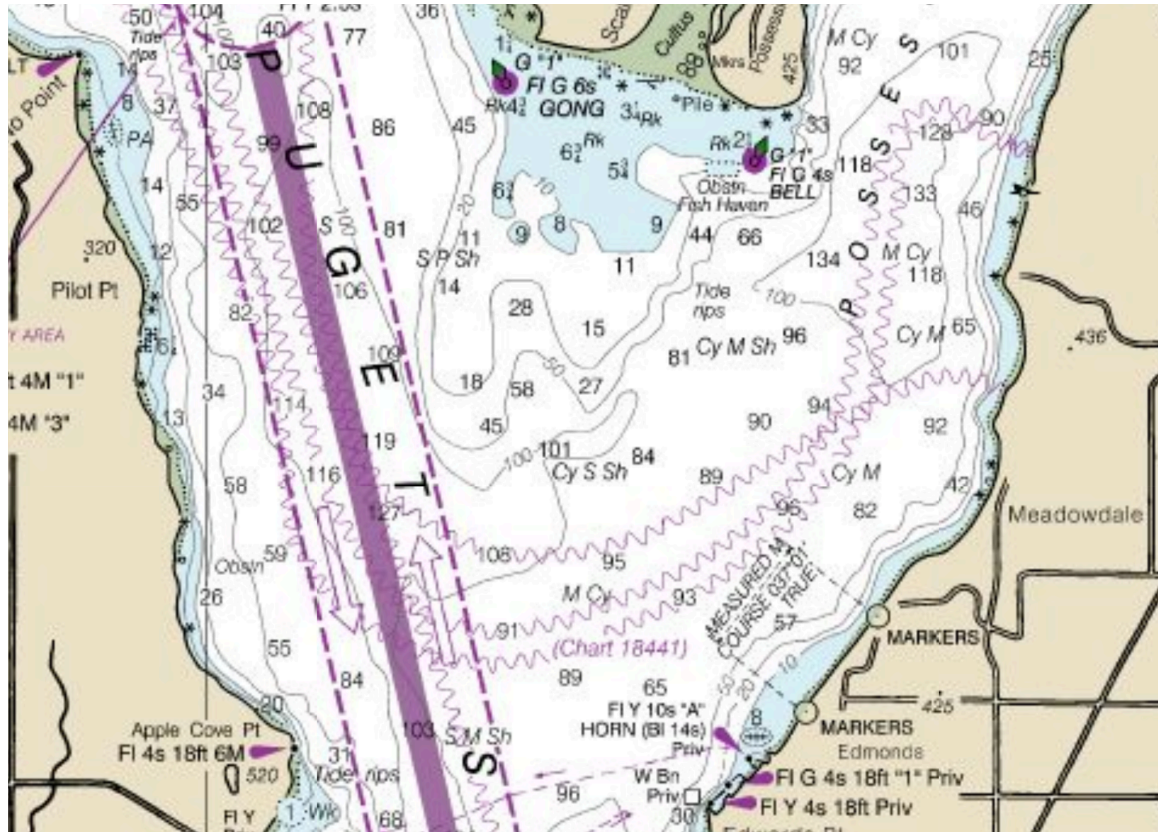
Click on the map to add to your path

Total distance: 47.52 ft (14.48 m)

Possession sound is about 13 km across (E-W) at latitude of Sunset Beach

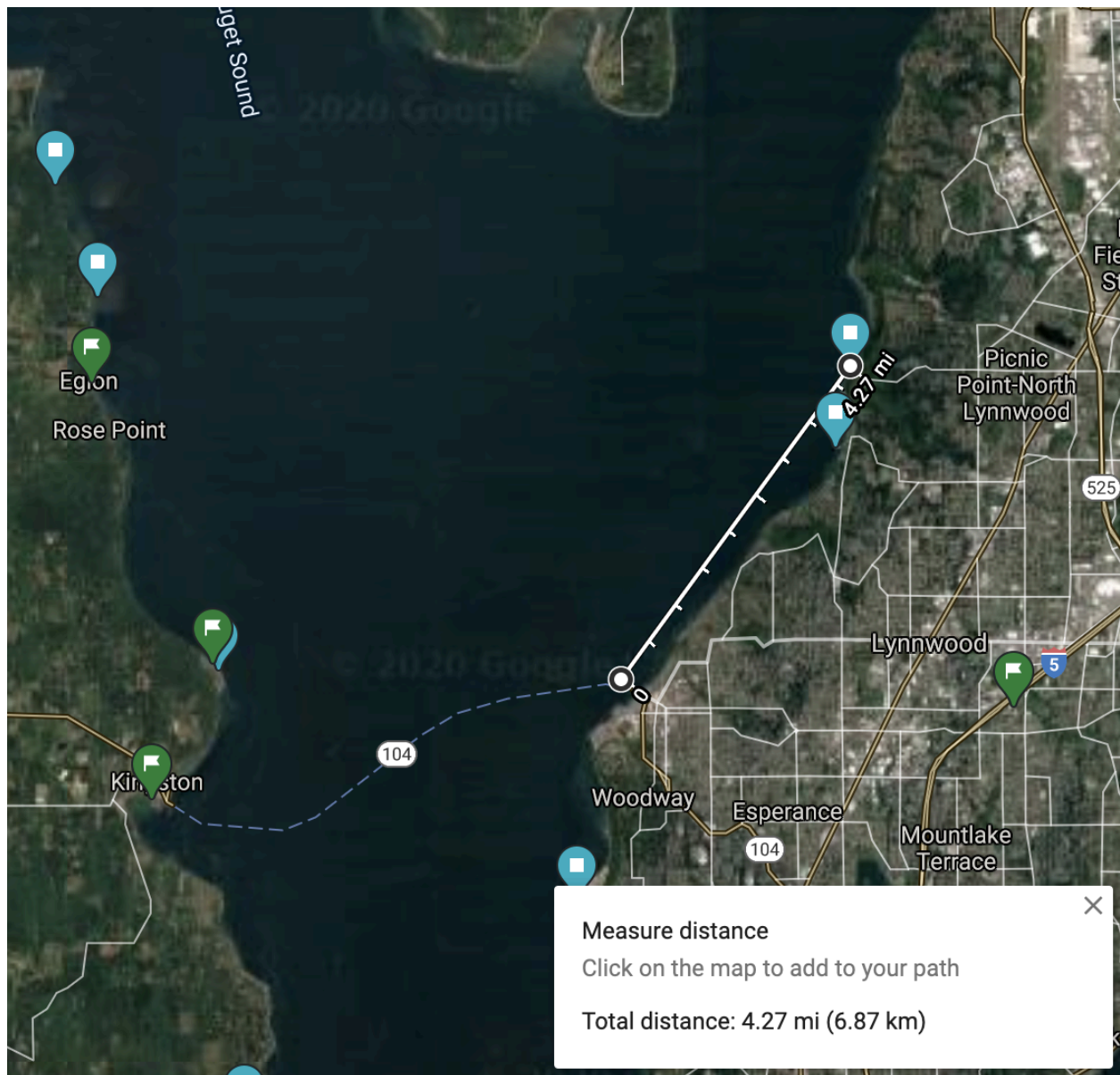


Possession Sound is deep (up to ~125 fathoms, = 230 meters), but Possession Point and Scatchet Head extend bathymetrically further than one might expect. From the perspective of Sunset Beach this may decrease detection range in the NW sector (i.e. SRKWs inbound approaching Point No Point), but the channel is deep to the north and to the SW.





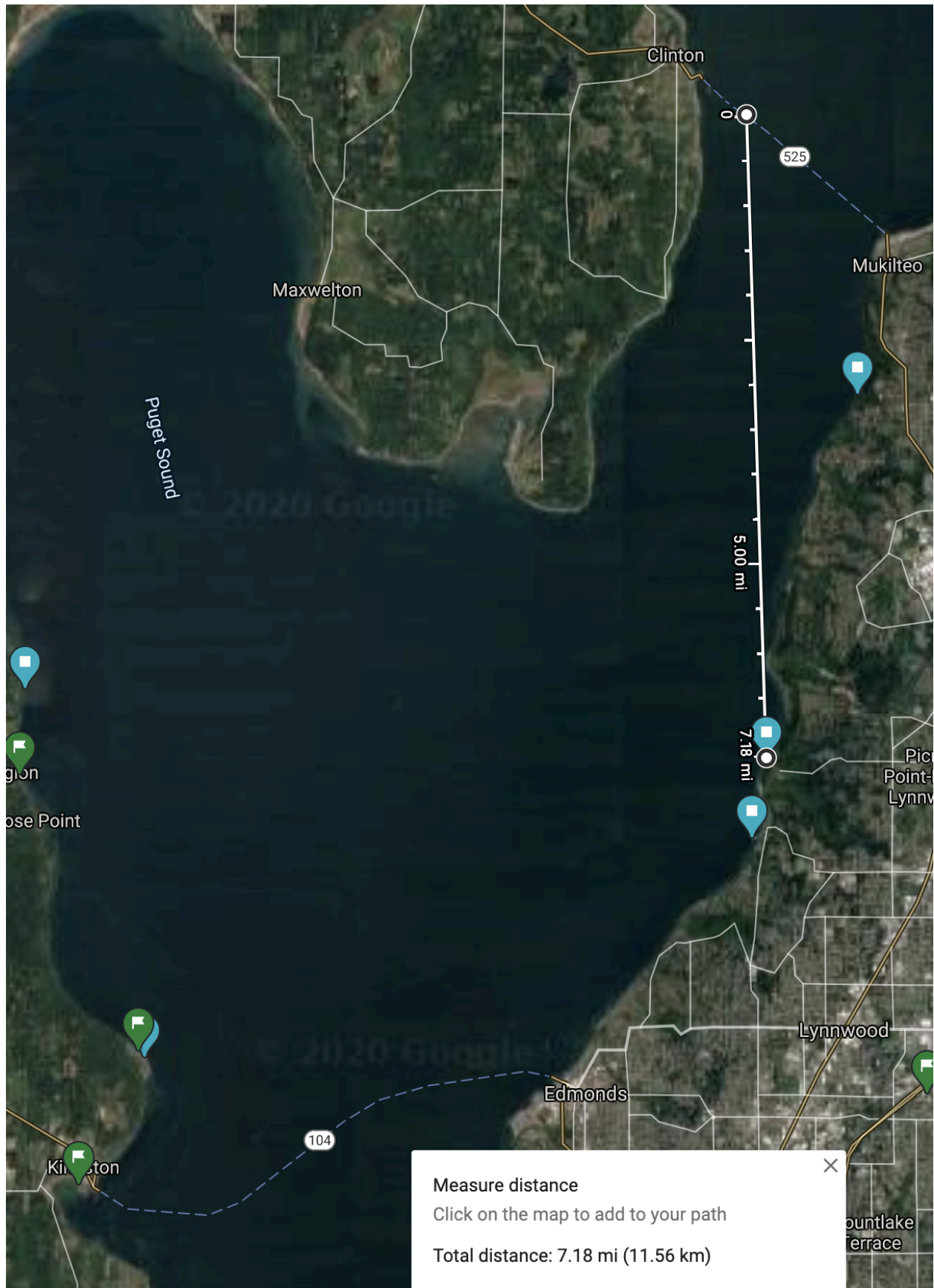
## Ferry Proximity



To the south, the Edmonds-Kingston route is line-of-sight. The closest point of the route is the Edmonds terminal at a range of about 6.75 km.

To the north, the Mukilteo-Clinton run is mostly out of sight. About  $\frac{1}{4}$  of the route (closest to Clinton) is within line of sight of Sunset Beach, and the distance on that bearing is at least 11.5 km.





Measure distance

Click on the map to add to your path

Total distance: 7.18 mi (11.56 km)

