

## Luther Burbank Dock Repair and Reconfiguration Demand and Allocation Analysis January 2, 2019

### INTRODUCTION

The City of Mercer Island's Parks and Recreation Department's (MIPR) Luther Burbank Park is located on the northeast shore of Mercer Island in Lake Washington. The park provides valuable recreational opportunities including access to Lake Washington for residents and visitors. The 2006 Master Plan for Luther Burbank Park recommended a variety of improvements to the park including preserving use of the dock facility to support recreational boating, fishing, and other activities. MIPR is undertaking a planning and grant process to revitalize the dock facility to provide continued stewardship of the park's facilities.

As part of the planning process to determine a preferred rehabilitation scheme for the dock facility, MIPR has requested that Reid Middleton provide a general analysis of potential types of uses and recommended allocations of uses for the dock facility based on review of existing information and discussion with stakeholders. Due to scoping and funding constraints for the analysis, a detailed market survey and assessment was not conducted. The following provides the general analysis based on a variety of available information including the 2006 master plan, a previous dock condition assessment and repair plan, a user survey, discussions with MIPR staff and the Mercer Island Marine Patrol, discussion with lake cruise operators, and various published data and reports.

### EXISTING FACILITY

The MIPR's Luther Burbank Park provides valuable access to Lake Washington for residents and visitors. The docks provide waterfront access and recreational moorage opportunities. The dock complex is located on the east shoreline of the park, adjacent to the site's original boiler building. The current dock layout and construction is optimized for use by large boats. The dock facility is primarily a fixed pier structure with the deck located high above the lake water level. The fixed docks were originally built in 1974 and are in need of repairs. A smaller floating dock section accessed by a gangway has been added to the facility to facilitate launching of hand-carried boats.

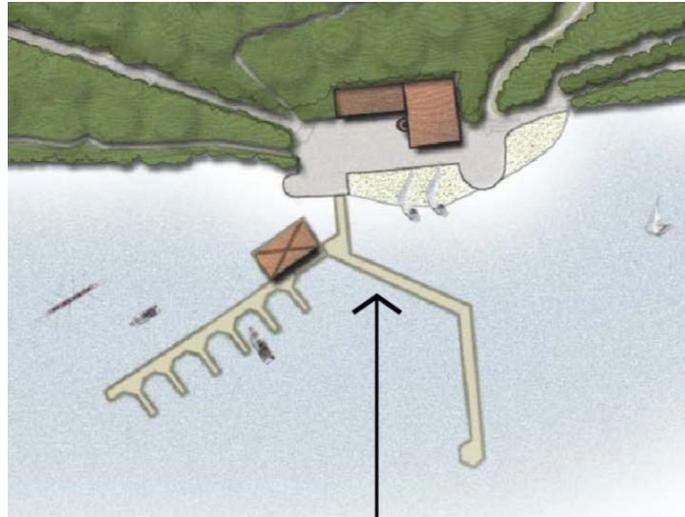


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## 2006 MASTER PLAN

The focus of the master plan for Luther Burbank Park completed in 2006 was that the docks would support boating facilities while maintaining the character of the park and the existing uses of the docks. The intention for the North Dock was to focus on passive use (such as fishing, sunbathing, etc.) but not swimming. The intention for the reconfigured South Dock was to replace the current angled dock with a straightened floating dock with finger piers for small motor craft, “human powered” boats (such as kayaks, canoes, small sailboats), and motorized launch boat storage.



## POTENTIAL USE / DEMAND DATA ANALYSIS

There are several potential uses of the docks at Luther Burbank Park that focus on recreation and could be accommodated in the dock reconfiguration. Non-boating specific uses could include sunbathing, fishing, swimming, and family gatherings. Boating specific uses could include small hand-carried watercraft (kayaks, canoes, stand-up paddle boards), small boat day use (both motorized and sail), larger vessel moorage and transient use, and cruise boat use (such as Argosy, Waterways, etc).

Data gathered or reviewed about the Luther Burbank dock reconfiguration included:

- Interview with Parks Staff

- Interview with Marine Patrol

- Parks 2018 Luther Burbank Dock Community Survey Results

- Luther Burbank Park Boiler Building Study (2017)

- Luther Burbank Waterfront Plaza Daily Video Log (2017)

- 2016 Fleet Characteristics Data

- Kirkland Waterfront Demand Assessment (2015)

- Interview with Waterways Cruises

- Interview with Argosy Cruises

A brief description of each item is included below. Note that the review is based on readily available data and that some of the data is regional data and not specific to the project site.

### Interview with Parks Staff

The interview was conducted on October 2, 2018, and included MIPR's planning, program, and maintenance staff. The main results of the discussion included:

Docks need to be repaired and/or reconfigured soon as they are deteriorating.

Kayaks and paddle boarders currently use the beach instead of the dock, but ideally want to launch from floats or a flatter sloped beach.

Docks are typically used by small boats (16' to 24' are most common).

Programs include sailing (6-8 boats at a time) and kayak / stand up paddle boarding (10 to 15 participants). There is a greater demand for all programs. Likely could do at least two programs at the same time all summer long.

Docks are used for sunbathing all the time, fishing (especially during early morning), and for swimming – even though it is posted “no swimming”.

Main dock usage by boats is small power boats. Typically use floating dock (if they know about it) or the existing slips (don't use larger pier portion). Lots of pick up / drop off, but not much (if any) day use moorage.

Larger vessels (30' to 50') boats only use docks occasionally.

Argosy Cruises docks three times a day during Seafair week.

### Interview with Marine Patrol

Sgt. Brian Noel with the Marine Patrol was interviewed on Oct 2, 2018. The main results of the discussion included:

Main concern heard is that existing piers are hard to tie to given their fixed height. Even their 30-foot-long Marine Patrol boats have trouble tying up sometimes. Most boats stop at the floating dock.

Dock has lots of fishing (morning) and sunbathers (all day).

Hand-carried vessels (kayaks, canoe, stand-up paddleboards, etc.) are the fastest growing watersport on Lake Washington.

Marine Patrol has seen a large increase in 16- to 25-foot boats on Lake Washington (mainly ski and wakeboarding boats), but not much of an increase in larger length vessels.

There are more wakeboarding and wake surfing boats, which generate larger wakes (5+ feet), so dock protection and shoreline protection from erosion is becoming more important.

Traffic on the lake is expected to continue to increase.

There is a water taxi service scheduled to start in 2020 in conjunction with new developments in Renton that may run throughout Lake Washington, and Luther Burbank could be a stop.

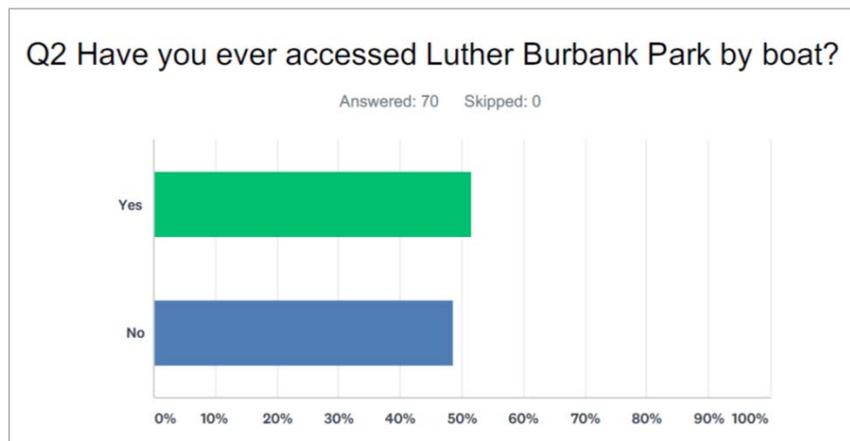
There are swimmers off the dock all the time (in spite of signage). People are going to swim near where they sunbathe but don't want to swim where there is boat traffic.

Cruise vessels (Argosy/Waterways/etc.) may be looking for additional stopping locations.

Parks 2018 Luther Burbank Dock Community Survey Results

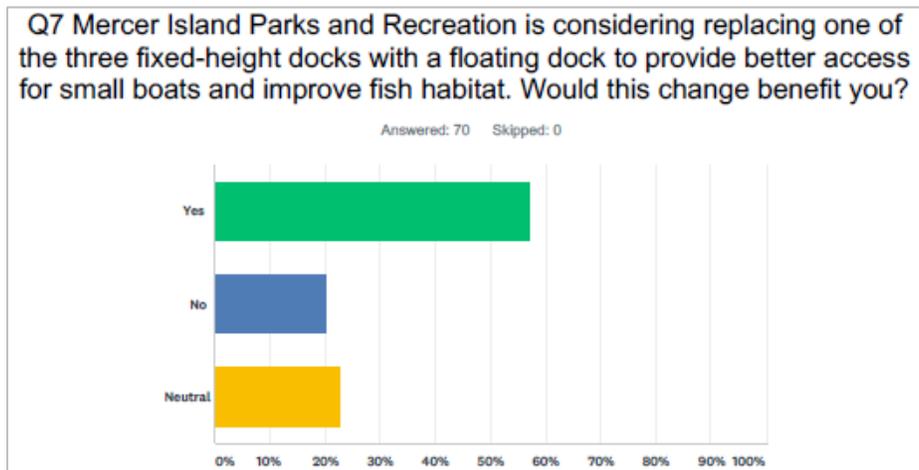
MPIR conducted an online survey this summer to gather data on the dock repair and reconfiguration. Approximately 70 responses were received. The main results include the following:

50% of respondents have accessed Luther Burbank Park by boat.

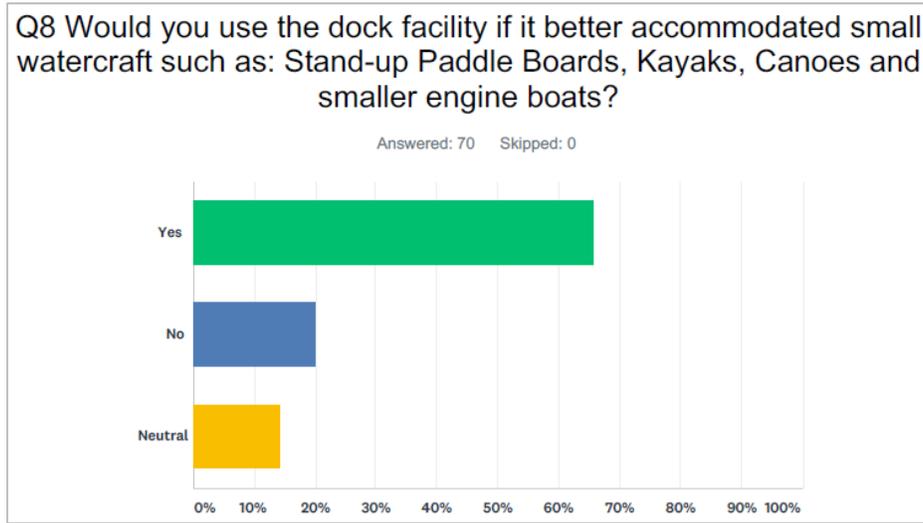


Over 84% (32 of 38) of boaters accessing the docks were in boats 30 feet long or less.

Almost 60% of respondents agreed that more floating docks would benefit them (with only 20% stating “no” and the remaining 20% being neutral).



Over 65% of respondents would use the dock if it were reconfigured for more small watercraft (with only 20% stating “no” and the remaining 15% being neutral).



Approximately 62% (33 of 53) of respondents would like to see one or more of the following items: more small boat moorage, floating docks with lower height, and/or more small watercraft facilities. Other main responses included items such as no action (due to cost), need for nearby food options, enhanced fish habitat, and creation of a swimming area.

Luther Burbank Park Boiler Building Study (2017)

Sail Sand Point and Kayak Academy both run summer programs at the docks.

Sail Sand Point uses the existing floating dock and Kayak Academy uses the rocky beach north of the docks. Neither uses the stationary docks (piers) except to access the floating dock.

Sail Sand Point has expressed interest in modifying the dock area to include more floating docks.

Luther Burbank Waterfront Plaza Daily Video Log (2017)

A daily video of the usage and activity of the docks was recorded for 82 consecutive days during the summer of 2017 (6/15/17 to 9/5/17).



Based on a review of these daily logs, the main results are as follows:

The North dock is used mainly for fishing and sunbathing, and the slip on the north side of the dock is rarely used by boats.

The majority of boat usage is on the floating dock and the adjacent slips.

The majority of boats observed are small boats (ski boats or similar).

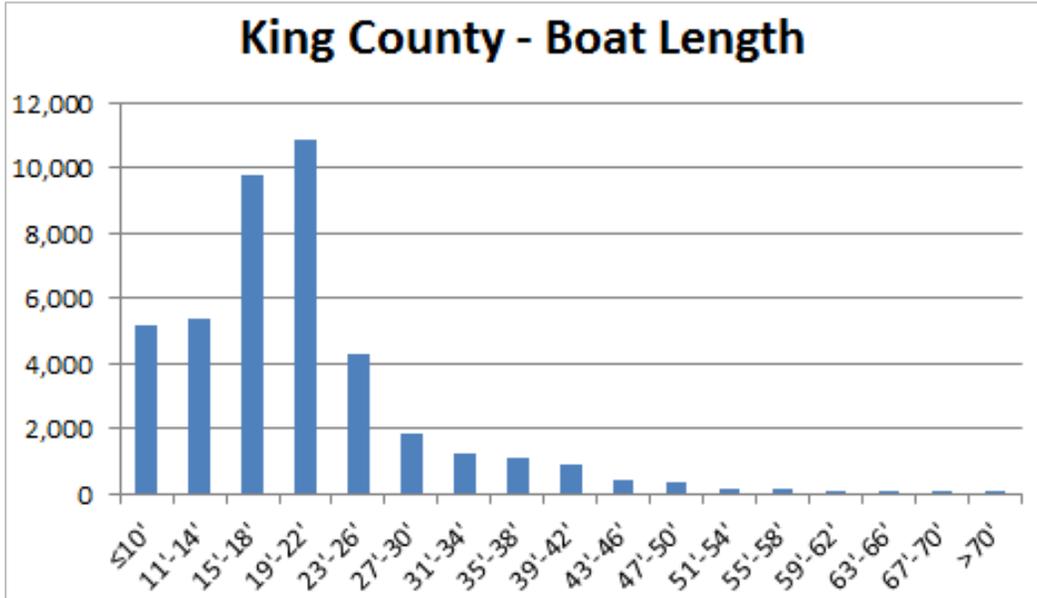
Larger vessels and cruise boats dock occasionally and typically dock at the end of the “middle” pier.

Visitors like to use the larger pier ends for viewing, sunbathing, etc.

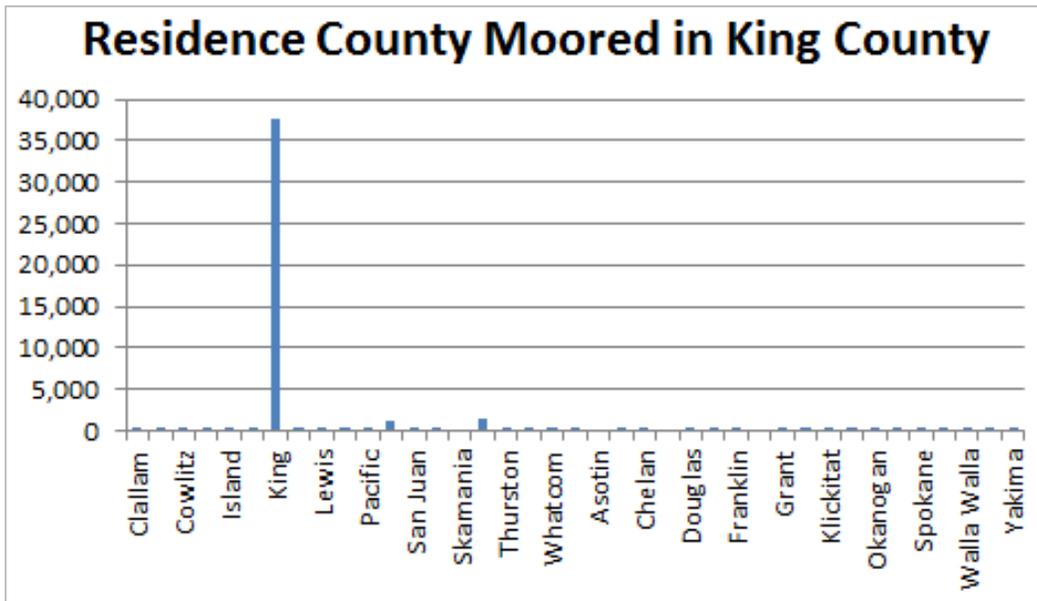
Traffic on the docks and in the slips is much higher on weekends than weekdays.

Fleet Characteristics Data (2016)

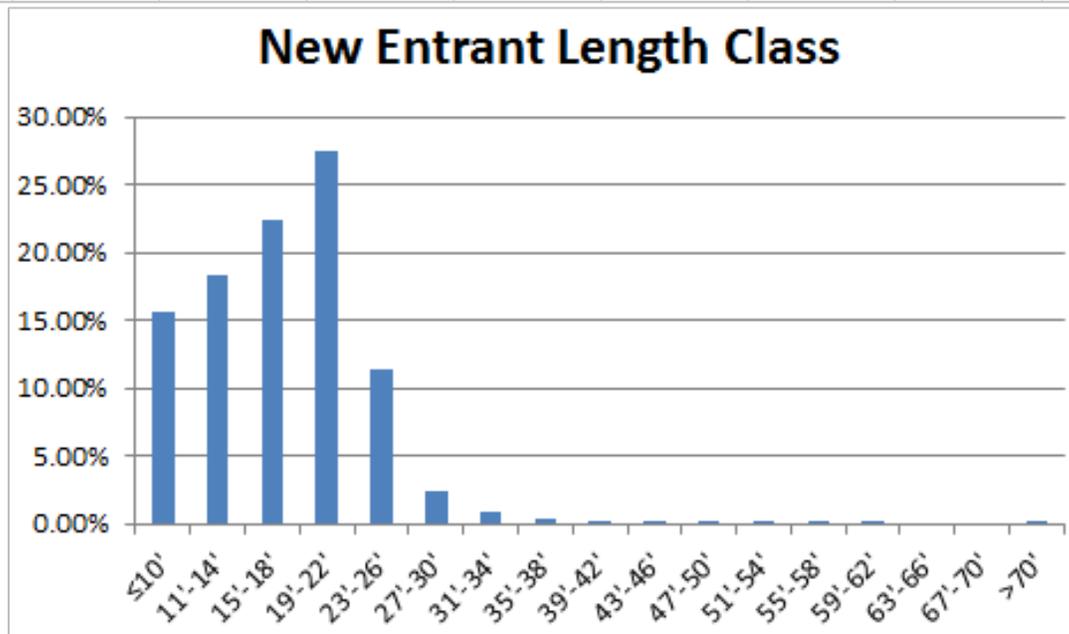
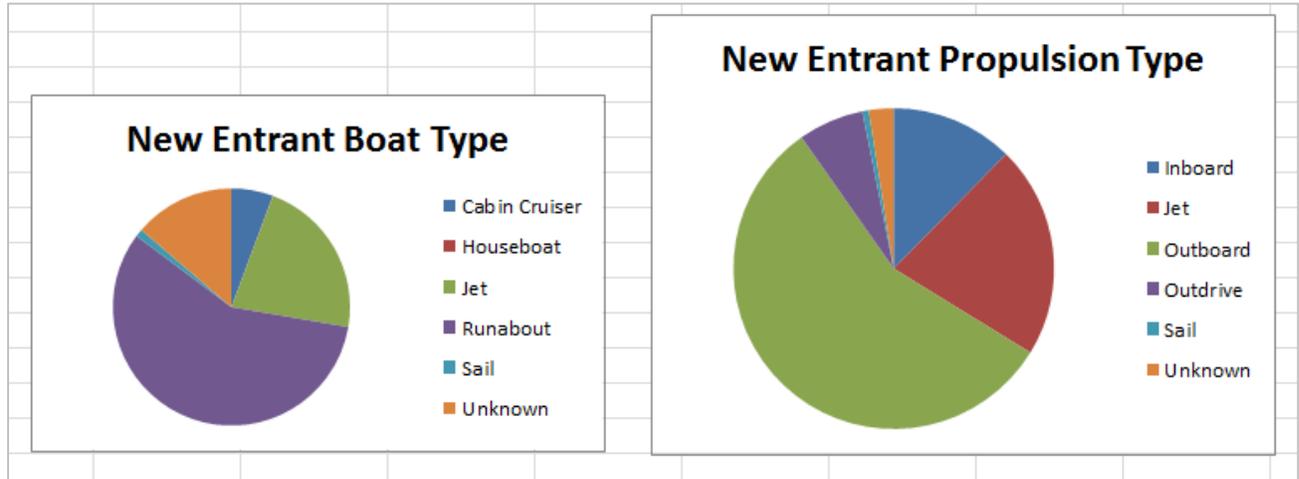
Based on the fleet characteristics data from 2016, the vast majority (89%) of boats in King County are 30 feet or less in length. This indicates that the target slip length for moorage is 30 feet or less.



The majority of vessels moored in King County are by residents of King County. This indicates that local moorage and typical use remains within King County.



The majority of new entrants into boating (2016 vs 2015 fleet total) are runabout boats, outboard motors, and less than 30 feet in length.



Kirkland Waterfront Demand Assessment (2015)

A demand assessment for the Kirkland City Pier was prepared by BST Associates in 2015. A few of the findings from the demand assessment that are most relevant to the Luther Burbank dock reconfiguration are shown below:

Demand for recreational boating is increasing with over 28,000 registered boaters within 10 miles of Lake Washington. There are only 237 public transient moorage spaces in Lake Washington.

## Recreational Boat Market

- ▶ Boat market improving and recreation demand increasing.
  - 28,000 register boaters within 10 miles of Lake Washington.
  - Of known boat launches there were 33,200 Boat Launches in 2013 excluding annual passes.
    - This does not include Kirkland Boat Launches as Kirkland’s payment system did not track boat launches separate from moorage payments.
- ▶ There are approximately 5,000 moorage slips and docks in Lake Washington
  - 237 public transient moorages in Lake Washington.
    - Kirkland accounts for 64% of the inventory
  - 2,171 moorage slips in marinas and 162 dry storage slips.
    - ▶ Kirkland accounts for 19% of the moorage slips on Lake Washington
  - 2,556 residential parcels with docks.
    - ▶ Kirkland accounts for 12% of parcels with residential docks on Lake Washington

## Moorage Summary

- ▶ There are ~ 237 public transient moorages in Lake Washington.
  - Kirkland accounts for 64% of the inventory of transient moorage on Lake Washington
- ▶ There are ~2,171 moorage slips in marinas and 162 dry storage slips.
  - ▶ Kirkland accounts for 19% of the moorage slips on Lake Washington
- ▶ There are ~2,556 residential parcels with docks.
  - ▶ Kirkland accounts for 12% of parcels with residential docks on Lake Washington

| City       | Permanent Moorage |             | Transient Spaces |
|------------|-------------------|-------------|------------------|
|            | Marinas           | Dry Storage |                  |
| Beaux Arts | 71                | -           | -                |
| Bellevue   | 688               | -           | 14               |
| Kenmore    | 295               | 162         | 38               |
| Kirkland   | 417               | -           | 152              |
| Renton     | -                 | -           | 12               |
| Seattle    | 700               | -           | 21               |
| subtotals  | 2,171             | 162         | 237              |

| Area             | Est Residential Docks |
|------------------|-----------------------|
| Bellevue         | 284                   |
| Hunts Point      | 70                    |
| Kenmore          | 57                    |
| Kirkland         | 301                   |
| Lake Forest Park | 106                   |
| Medina           | 170                   |
| Mercer Island    | 654                   |
| Renton           | 73                    |
| Seattle          | 677                   |
| Yarrow Point     | 49                    |
| King County      | 115                   |
| Total est        | 2,556                 |

(Source: Kirkland Waterfront Demand Assessment, Jan 5, 2015, BST Associates)

Boating is one of the top three water-related activities in Washington with about 35% of residents boating and approximately 10% wanting to participate or boat more.

## Washington Participation in Boating

One of top three water-related activities

Of Washington residents:

- > 35% boat
- 25% motorboat
- 29% freshwater
- > 13% saltwater



Days of Participation ~ 15 days/yr

Latent Demand

- Would like to participate: 5.5%
- Would like to do more: 4.2%

Source: Washington State Comprehensive Outdoor Recreation Planning (SCORP) document.

*(Source: Kirkland Waterfront Demand Assessment, Jan 5, 2015, BST Associates)*

Recreational boating is growing, especially with small boats in Lake Washington. There is also a strong demand for cruise boats.

## Markets

- ▶ **Recreational boating**
  - Market is recovering from recession
    - Recent growth is high in smaller boats (20–40 feet)
  - Strong market in Lake Washington
    - 33,000 known boat launches in 2013 in Lake Washington
  - Strong interest by boaters in Kirkland facilities
- ▶ **Commercial boats**
  - Strong market for:
    - Cruise operators
    - Sailing club

*(Source: Kirkland Waterfront Demand Assessment, Jan 5, 2015, BST Associates)*

The number of cruise vessels in the Puget Sound area continues to increase. Below is a list of general information on passenger ferry and passenger tour vessels in the Puget Sound and Seattle Area. Waterways Cruises also has four vessels that are not currently included in the table. Average vessel length range is 60 to 90 feet.

| Service/<br>Route          | Operator                  | West<br>Terminal    | East<br>Terminal | Boat<br>Type/Name    | Length<br>(ft) | Beam<br>(ft) | Weight<br>(tn) | Passgr.<br>Capacity | Draft/<br>Draw (ft) |
|----------------------------|---------------------------|---------------------|------------------|----------------------|----------------|--------------|----------------|---------------------|---------------------|
| Kitsap Foot<br>Ferry       | Kitsap<br>Transit         | Port<br>Orchard     | Bremerton        | Carlisle II          | 60             | 24           | 95             | 143                 | 5.7                 |
|                            |                           | Bremerton           | Annapolis        | MV Admiral Pete      | 65             | 18           |                | 122                 |                     |
| Kitsap Fast<br>Ferry       | Kitsap<br>Transit         | Bremerton           | Seattle          | Rich Passage 1       | 78.3           | 28.2         |                | 118                 | 3                   |
| Vashon<br>Water Taxi       | King County<br>Water Taxi | Vashon              | Seattle          | MV Sally Fox         | 104            | 32.9         |                | 278                 | 3.6                 |
| West Seattle<br>Water Taxi | King County               | West<br>Seattle     | Seattle          | MV Doc Maynard       | 104            | 32.9         |                | 278                 | 3.6                 |
| Victoria<br>Clipper        | Victoria<br>Clipper       | Victoria            | Seattle          | Victoria Clipper IV  | 130            | 30           | 478            | 330                 | 13                  |
|                            |                           |                     |                  | Victoria Clipper III | 88.5           | 28.5         | 235            | 254                 | 3.5                 |
| San Juan<br>Clipper        | Victoria<br>Clipper       | San Juan<br>Islands | Seattle          | San Juan Clipper     | 85.3           | 32.8         | 235            | 237                 | 4.9                 |
| Tour Vessel                | Argosy                    | Seattle             | Blake<br>Island  | Salish Explorer      | 92             | 36           |                | 420                 |                     |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Spirit of Seattle    | 115            | 33           | 59             | 499                 | 7                   |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Lady Mary            | 98             | 26           | 44             | 300                 | 9                   |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Celebrations         | 70             | 18           | 27             | 128                 | 4                   |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Champagne Lady       | 70             | 18           | 34             | 149                 | 4                   |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Goodtime II          | 85             | 28           | 67             | 431                 | 6                   |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Goodtime III         | 85             | 26           | 66             | 340                 | 9.7                 |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Sightseer            | 70             | 25           | 44             | 250                 | 9                   |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Beaver               | 31.5           | 12           | 9              | 25                  | 4.6                 |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Queens Launch        | 36             | 16           | 16             | 62                  | 3.5                 |
| Tour Vessel                | Argosy                    | Seattle             | Seattle          | Royal Argosy         | 180            | 42           | 91             | 800                 | 8.6                 |

(This information was expanded from initial data provided by Nelson\Nygaard Consulting Associates, Inc. to Seneca to add additional Argosy Vessels and beam information)

### Phone Interview with Waterways Cruises

Hilton Smith, the founder of Waterways Cruises, was interviewed on Oct 12, 2018. The main results of the discussion included:

Waterways has in the past and currently does stop at Luther Burbank docks. Stops have only been for private cruises (not public) so far and depends on demand.

Waterways cruises are mainly seasonal: May through September.

Waterways currently has a third boat they'd like to run out of somewhere for Seafair, football games, etc., and Mercer Island is viewed as a good central location.

Preference is strong for floating docks instead of fixed piers like existing condition. Low lake water levels and fixed pier heights create all sorts of issues for cruise boats.

Waterways does about 700 cruises per year on Lake Washington (using 3 to 4 vessels).

Waterways would love for Luther Burbank to be a "touch-and-go" location (passenger pickup and drop-off).

Docks would need to be ADA accessible with seating or assembly space for 30 to 150 people (covered preferred) and include lighting (for evening and/or night cruises) and a bus turn-around if possible. Docks would not need power or water.

Waterways is currently paying approximately \$200 to "touch-and-go" at other locations and could likely do up to 50 stops per year at Mercer Island.

*"We would love to see it in better condition than it is, and would love to use it more than we do." – Hilton Smith, Founder of Waterways Cruises*

### Interview with Argosy Cruises

Argosy Cruises was contacted on October 12, 2018. Chris House (Director of Vessel Operations) provided input regarding dock reconfiguration at Luther Burbank Park. The questions and responses are included below:

Would Argosy have any interest in stopping at the Luther Burbank Park docks? During Seafair and/or other times throughout the year? If so, could you provide an estimate of how many times moorage would be desirable (#/month perhaps)? Also, are there specific ships that would be more likely to stop at this location (we have your fleet list from last year)?

- Yes we stop at Luther Burbank a couple times a year. I'm thinking specifically of the Mercer Island tours we do annually on board the Champagne Lady. Guesstimate of how often additionally we might stop if the facility had an upgrade would be 1 – 2 x per month May – September. Likely vessels = Champagne Lady, Lady Mary, Celebrations, and the Sightseer

The docks are currently fixed piers. Is there a preference for Argosy whether the docks are fixed piers or floating docks?

- Fixed piers. Fixed piers make for a more stable & safe dock when some knucklehead goes zipping past and wakes out the dock.

Are there amenities that Argosy would require in order to be a stopping location. Docks and/or floats will be ADA accessible, but are there other amenities (power, lighting, water, seating, assembly space, etc) that are either needed or desired?

- Needs: lighting; assembly space (under cover would be great); a better lit path from the parking to the dock, (last time I was there I felt it was not lit well, but that might have been since improved); sturdy and commercial sized cleats; power

pylons (if they exist) to be set back from dock edge at least 2' (to clarify, electrical stanchions and/or hose bibs that are set close to dock edges are particularly susceptible to being broken off by larger commercial boats—setting them on the opposite side of the dock from where the moorage occurs, or protecting them with pilings alleviates the possibility of damage to them); load zone close to dock and accessible by small van for caterers/vendors; 9' minimum depth of water at dock edge; clearly labeled “commercial zone” area on the docks for commercial boats, or some other way of clearly communicating “no parking” during times ourselves or other commercial operators have cruises departing from there

- Nice to have: water; power; sewage pump out (now I'm just dreaming)

## CONCLUSION

Personal watercraft (kayaks, canoes, stand-up paddleboards, etc.) and small boat (motorized and sail, less than 30') use is increasing and will continue to grow.

Sailing and kayaking programs could double from current size and continue to grow due to strong demand.

Cruise operators are interested in Mercer Island and would like to make Luther Burbank docks a stop if facilities are improved.

Most users would prefer lower, floating docks.

## PRELIMINARY RECOMMENDATIONS

The following provides preliminary recommendations for use and allocation of uses at the dock facility. These recommendations will be finalized based on further discussion with MIPR staff following review of this draft report.

Dock use should be split into two separate areas. One area would be allocated for non-boating activities such as fishing, sunbathing, and potentially swimming, and the other area would be for boating activities such as hand-carried boats, sailing, motorized small boat moorage, and larger vessel and cruise boat moorage.

The existing North pier could be repaired or replaced for non-boating activities. Due to the high cost of dock facilities and the difficulty permitting new overwater coverage, it is not recommended that expanded dock area be constructed for non-boating activities.

A new dock configuration should provide separation as much as feasible between the motorized and non-motorized boating activities.

The existing Middle and South piers should be removed and reconfigured for small boat and cruise operations with new floating docks. The new floats could incorporate a breakwater float for the outer dock to provide better protection for the moorage areas and the shoreline from waves and wakes and smaller floating docks behind the breakwater float for moorage.

Piers and floats need to be ADA accessible and stable for multiple types of uses.

The recommended minimum width for a new breakwater float is 12 feet. The actual required width and configuration of a new floating breakwater should be determined based on a detailed coastal engineering design.

The recommended minimum width for other floats and piers is 8 feet, though wider floats may be needed for hand-launch and other small boat activities.

Slips for small boat moorage should focus on boat lengths of 30 feet or less (the length with the most demand and potential future growth). With only a little over 200 transient moorage spaces available on Lake Washington, there is a large demand for additional transient moorage.

Slips are recommended to be split fairly evenly between 25- and 30-foot slips.

The existing docks have approximately 16 moorage spaces (finger piers and floating dock) and the larger piers are not used significantly. It is recommend a reconfiguration include at least 16 to 20 moorage spaces and potential phasing for an additional 16 or more moorage spaces to be added in the future.

The existing non-motorized float used for classes is approximately 60 lineal feet of useable area (50' along the west side and perhaps 10' along the south side). A float that provides useable area along both sides of its length and the end of the float would maximize capability. It is recommended that 200 lineal feet of non-motorized moorage be provided. For reference, below is a table with some of the main non-motorized locations on Lake Washington.

| Facility Name               | Lineal Feet of Moorage | Notes   |
|-----------------------------|------------------------|---|
| Agua Verde                  | 200'                   | Kayak rental facility float.  |
| Sail Sand Point             | 315'                   | Length includes 200' of floating dock and 115' of the adjacent boat ramp float. |
| Renton Sailing Center       | 175'                   | Sailboat storage and launch floats.   |
| Leschi Marina Dinghy Floats | 860'                   | 3 separate dinghy float laterals.   |

A new floating breakwater could be designed to provide flexible side-tie moorage, including provisions for touch and go moorage of the larger cruise vessels that utilize the lake on the outer side of the floating breakwater.

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