Economic Impact of Vancouver Lake Recreation

Prepared for:

Friends of Vancouver Lake

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Economic and Development Services

AT-A-GLANCE SUMMARY

This report addresses the economic impact of Vancouver Lake recreation – currently and prospectively. What follows is a summary of observations with this first phase working report.

THE VANCOUVER LAKE SETTING

Situated just north of the Columbia River and west of downtown Vancouver, Vancouver Lake comprises approximately 2,700 acres with an average depth of less than three feet, with maximum 12-15 foot depth in the mid-to-late spring. With more than seven miles of shoreline, Vancouver Lake comprises the largest single contiguous body of water wholly located within and serving the Vancouver/Portland metropolitan area.

At the initiative of the Port of Vancouver and with funding from the U.S. Environmental Protection Agency, a lake restoration project to improve lack water quality including a flushing channel connection to the Columbia River was completed in the early 1980s. The Vancouver Lake Restoration Project cost $17 million and was the largest project of its type ever undertaken through the federal Clean Lakes Program. Originally conceived in 1965, the restoration project was completed in June 1983.

The combined dredging and construction of the flushing channel initially resulted in improved water quality, However, the operations and maintenance program for the project were not executed as initially planned. Water depth and quality have subsequently declined, with resulting adverse impacts to recreation and tourism potential.

CURRENT USERS OF VANCOUVER LAKE

Primary on-water recreation uses include non-motorized rowing, paddling and sailing activities. Shoreside facilities for classes, training and competitive events are operated by the Vancouver Lake Rowing Club and Vancouver Lake Sailing Club.

A key objective of the Portland-Vancouver Rowing Association is to establish and maintain a venue to "host regional and local competitions and help develop the programs, athletes and the sport of rowing in the Northwest Region." The Vancouver Lake Sailing Club is billed as "a family-oriented club that has included national champion sailors and even US Olympic team sailors."

Operated by Clark County, the Vancouver Lake Regional Park is the public recreation space on the lake. The primary source of park revenues comes from parking fees; however park use has flattened and parking revenues have declined in recent years – at a time of increased water quality issues including temporary closures of the lake. On the plus side is the contribution that Frenchman's Bar is making as part of a more complete lake/river recreation package.

CURRENT ECONOMIC IMPACT

Based on rowing and sailing clubs surveyed, the economic impact of competition activity is conservatively estimated at $3.9 million of direct annual spending – increased to $5.8 million if indirect and induced spending (or economic multiplier) impacts are included. Economic potential can be greatly expanded with critical lake improvements to enhance recreational appeal both locally and regionally, together with supportive shore-side economic development.

FUTURE OPPORTUNITIES

A major focus of this report is to address not just current but prospective economic impacts of Vancouver Lake recreation and supportive use if developed to the area's full potential – as a major hub for rowing and sailing activity in the Pacific Northwest. This report draws on rowing/sailing experience together with a range of case studies nationally and beyond – to illustrate expended recreation opportunities as might reasonably be considered.

Short term opportunities depend on improved water quality, increased depth and predictable year-round access. Longer term potentials are to market for competitive events regionally and nationally. There is untapped potential to increase on-water activity across a broad spectrum of recreational users – as with County enabled rentals of paddle boards, inner tubes, paddle boats … and more, all to re-invigorate park utilization and generate added public sector revenue.

A broader vision for Vancouver Lake area development could involve not only enhancement of existing and new public recreation/sport opportunities, but also address the potential for other complementary private development – as with marina, dining, lodging, high wage tech-campus, service-retail, residential and mixed use development. Also addressed should be potential for area-wide conservation and ecosystem enhancement – possibly creating additional wetland and other habitat including improved linkage to the Ridgefield National Wildlife Refuge.

To summarize, a successful strategy for Vancouver Lake recreation should serve to:

- Balance conservation and economic development values
- Lead with on-lake and shoreside recreation opportunities
- Incent area-wide economic development
- Leverage sustainable public and private investment

As a place of on-going interaction between the natural environment and human gathering dating back thousands of years, Vancouver Lake represents perhaps this region's signature asset, unduplicated but with its full potential yet unfulfilled. Re-establishing the lake's ecological functioning within the Columbia River system can serve to draw new and expanded recreation opportunities. The lake's recreational and aesthetic significance may then leverage private investment essential for multi-generational economic and ecosystem sustainability.

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Note: Cover photos are from Bob Berrigan, Vancouver Lake Rowing Club, and Vancouver Lake Sailing Club.

I. INTRODUCTION

This report addresses the economic impact of Vancouver Lake recreation – both currently and prospectively. Information within this report is intended to provide context for the discussion and determination of renewed public-private initiatives for on-lake, lakeside and greater area conservation, recreation and economic development. This preliminary assessment has been prepared on behalf of the Friends of Vancouver Lake (FoVL) by the Vancouver-based economic and development consulting firm E. D. Hovee & Company, LLC.

BACKGROUND, PURPOSE & APPROACH

In the early 1980s, the Vancouver Lake Restoration Project – initiated by the Port of Vancouver in cooperation with the U.S. Environmental Protection Agency – was completed with the intent of restoring ecological functions and enhancing recreation opportunity for the greater Vancouver/Clark County community. At a completed cost of $17 million, the restoration project initially succeeded in improving water flow through and water quality within the lake.

Recreation activity increased at Vancouver Lake and then the nearby Frenchman's Bar regional parks. In addition to park-related swimming and on-water use, rowing and sailing activities also increased through initiatives of private clubs – including attraction of competitive events.

However, in recent years lake conditions have again deteriorated. Silting has occurred, reducing water depth to an average of only three feet. Algae blooms and Eurasian watermilfoil (EWM) weed infestations have affected water quality – on occasion requiring lake closure for health reasons and also cancellation of on-water recreation events. Attendance at and utilization of Clark County's Vancouver Lake Regional Park also has been negatively affected.

Recognizing that the ecological and recreation functions of Vancouver Lake are again threatened, FoVL has taken a lead role to re-engage a community discussion and then encourage public-private initiative to restore the lake to its full potential.

Report Purpose

The primary purpose of this report is to characterize and, where possible, quantify the economic impact of recreation at Vancouver Lake – both currently and prospectively. In order of relative priority, this evaluation places:

- Primary emphasis on rowing, paddling, sailing and related on-water events
- Secondary emphasis on shoreside recreation – currently focused on the Vancouver Lake and Frenchman's Bar regional parks
- Tertiary emphasis on long-term economic development and conservation opportunities for the greater Vancouver Lake area – recognizing other public and private initiatives being advanced to leverage the greatest possible benefits for Vancouver/Clark County.

Approach to Economic Impact Analysis

At the initiative of FoVL and in cooperation with Clark County Public Works, the Vancouver Lake Rowing Club and Vancouver Lake Sailing Club, E. D. Hovee has taken the following steps to conduct this economic impact assessment:[1]

- The first step is to document and quantify current on-water activity, reliant in large part on existing information and surveys as for rowing and sailing activities on the lake for recreation, training and/or competitive events.
- A second step is to obtain information on park usage trends from Clark County – primarily focused on Vancouver Lake Regional Park and secondarily on Frenchman's Bar situated nearby on the Columbia River.
- A third step is to consider future potential recreational demand – based on suggestions from existing users and by reference to other potentially comparable facilities and event venues nationally.
- A fourth and final step is to briefly consider the opportunity to expand the realm of economic impact – for broader conservation and economic development activities as might be catalyzed by and reinforce Vancouver Lake recreation functions.

The conduct of this economic impact analysis has involved participation and assistance from FoVL together with other participating public and private organizations. This assistance is gratefully acknowledged.

REPORT ORGANIZATION

The remainder of this report is organized to cover the following topics:

The Vancouver Lake Setting
Current Users of Vancouver Lake
Current Economic Impact
Future Opportunities

Included with the report are three appendices. Appendix A provides a profile of E. D. Hovee & Company, LLC as project preparer. Appendix B covers results of user surveys. Appendix C provides short case study information for potentially comparable rowing and sailing venues. Extensive endnote annotation is also provided with this report.

II. THE VANCOUVER LAKE SETTING

Vancouver Lake is situated just west of downtown Vancouver, north of the Columbia River and south of Ridgefield and the Ridgefield Wildlife Refuge. The lake serves as a transition point from the populated center of Vancouver on the east to the Port's industrial area to the south, and to agricultural and open space area extending west to the Columbia River.

As of 1980, Vancouver Lake was estimated to comprise a surface area of approximately 2,700 acres. Currently, the lake covers about 2,300 acres, is up to two miles across and encompasses a 7-mile perimeter. With a maximum depth of 12-15 feet, average depth of the lake is now less than three feet. An island in the middle of the lake was created three decades ago as a result of dredging in conjunction with the Vancouver Lake restoration project.[2]

As described by the U.S. Geological Survey (USGS), Vancouver Lake's:

> "Flushing Channel was constructed in the 1980s to connect the Columbia River with the lake to increase water inputs. Water flows through two 7-ft diameter culverts equipped with tide gates that only allow water to flow into the lake. If the lake level rises higher than the stage of the Columbia River, the tide gates close and water flow from the channel is stopped. Lake River connects to the Columbia River approximately 14 mi downstream of the lake, and the flow here is bidirectional and the flow direction changes almost every day. The direction of flow in Lake River is determined by the Columbia River stage, which is controlled by the tides and hydropower operations upstream of the Portland/Vancouver area. Because of the influence of the Columbia River, Vancouver Lake shows a large change in lake stage over the year, with the deepest depths in winter months and shallowest conditions in summer, resulting in a 10–15 ft difference in lake depth during a given water year."[3]

The lakebed of Vancouver Lake was initially deeded to the Port of Vancouver in 1919. The Washington State Department of Natural Resources (DNR) is now the owner of Vancouver Lake lakebeds and some tidelands. Much of the shoreline is owned by public agencies including Clark County, the City of Vancouver, Washington Department of Fish and Wildlife.[4]

HISTORICAL BACKGROUND

Vancouver Lake has served as a gathering place for human activity dating back at least several thousand years. Pre-European use was by an indigenous population with numerous settlements in the area. An Environmental Impact Statement (EIS) prepared in 1978 for the lake reclamation project noted the historical presence of over 40 Native American relic sites, situated at scattered sites on the lake shoreline and extending north along the banks of Lake River.

At the time of early British and then American settlement through the 19th century, Vancouver Lake was described as clear, up to 20 feet deep. Agricultural interests subsequently involved draining of Shillapoo Lake to the north. Recreational opportunities also emerged as a topic of community interest.

Until early in the 20th century, the lake was naturally flushed by spring and fall freshets on the Columbia River. Subsequent construction of dams on the Columbia and dikes on lowlands surrounding the lake served to reduce the effectiveness of this natural flushing system.

After the second world war, the Vancouver Lake area was seen as a resource for flood control. However, the lake was increasingly affected by water pollution with development of the lake's watershed – as with fertilizer loads coming from Burnt Bridge Creek and Salmon Creek via Lake River. Lake pollution, algae blooms, sedimentation and Eurasian watermilfoil (EWM) have all contributed to degraded water quality in recent decades – with resulting negative effects to the lake's suitability for recreational use.

While not owning land directly fronting on Vancouver Lake, the Port of Vancouver owns nearby industrial and marine terminals with significant frontage on the Columbia River. The Port also served as lead agency in the 1983 Vancouver Lake Restoration Project.

Vancouver Lake Restoration Concept

The impetus to restore the ecological and recreational functions of Vancouver Lake extends back over the last four to five decades. In 1976, the Port of Vancouver submitted an initial application to the U.S. Environmental Protection Agency (EPA) for a Vancouver Lake rehabilitation project. The application noted that the local and regional public benefits that could be realized are "many, complex, and far-reaching."

An important consideration was the recognition that "Vancouver Lake is the only major lake within the metropolitan region both large enough and undeveloped enough to accommodate an extensive array of water-oriented recreational activities."[5] Benefits of a major rehabilitation were cited to include improved water quality, recreation, agriculture, multiple use opportunities, and wildlife enhancement.

Environmental Impact Analysis

The next step in the funding process for the then proposed reclamation project involved preparation of an environmental impact statement (EIS). As described in the resulting summary to the 1978 Final EIS:[6]

> The project would result in the improvement of water quality in Vancouver Lake through construction of a flushing channel and dredging in the Lake. The flushing channel would permit water from the Columbia River to enter Vancouver Lake. Dredging would improve circulation within the lake. Disposal of dredge materials constitute the major potential for adverse effects. Critical wetland habitats will not be used as disposal sites. Recreational opportunities in Vancouver Lake would be enhanced.

Action taken as a result of the EIS was to provide an "award to grant funds to the Port of Vancouver for the rehabilitation and restoration of Vancouver Lake."

At the time, Clark County's industry was described as "extractive or heavy industry," much of which was clustered around Port of Vancouver facilities. The EIS noted that only limited facilities were available in Clark County to serve the water/lake recreationist (with the exception of Merwin Lake). Despite strong demand in the metro region, the only water-related recreation sites then planned were those in conjunction with restoration of Vancouver Lake.

The EIS concluded that the "creation of a widely used recreation facility in close proximity to the City of Vancouver could result in an increase in tourism to the area." Cited was the potential for an Olympic sailing course, drawing large numbers of spectators. Projected were 1.705 million recreation visits occurring annually by 1980 at Vancouver Lake Park with restoration, for yearly recreation benefits of up to $4 million. Not included with the estimates was the potential for more recreation outside the park, for example, as might occur with a marina or sports fields.

Restoration Project Implementation

The Vancouver Lake Restoration Project cost $17 million – the largest project of its type ever undertaken through the federal Clean Lakes Program. As conceived in 1965, years of study and reviews were required before design was completed and funding finalized in 1981. Construction was completed over 30 months in June 1983 – six months ahead of schedule and under budget.

Key elements of the project involved lake dredging, creation of an island using dredge spoils, modification of the shoreline, fill of 600 acres of uplands and construction of a flushing channel. Created by the U.S. Army Corps of Engineers, the intention of the flushing channel was to carry Columbia River water under Lower River Road into the lake, providing cleaner, cooler water to improve water quality. [7]

Tide gates in Flushing Channel culverts allow water to enter but not exit the lake back through the flushing channel. The lake is strongly influenced by tidal flows from the Columbia which

empties into the Pacific Ocean 90 miles downstream at Astoria. Before construction, it was estimated that waters of the lake turned over every 25-28 years. With the flushing system in place, the expectation was that waters of the lake would be renewed every 21 days or so.[8] The Port of Vancouver periodically clears the Flushing Channel, removing wood and other debris that collects near culverts and also clearing the banks of invasive vegetation – as with Himalayan Blackberry. However, there are concerns that maintenance has not been adequate.[9]

Subsequent Economic Benefits Analysis

In 1980, two years after EIS completion but before restoration, *An Assessment of Economic Benefits of 28 Projects in the Section 314 Clean Lakes Projects* was conducted for the U.S. Environmental Protection Agency (EPA). Vancouver Lake was one of the 28 projects evaluated.[10] In this report, the current environmental condition of Vancouver Lake was described as follows:

> Vancouver Lake is highly eutrophic and silted in with nutrient-enriched sediment. The project's objectives are to meet water quality standards, improve recreational capacity, and, in conjunction with an active 208 program, to reduce non-point source pollutant loadings from the watershed. It involves extensive dredging, construction of a flushing channel to bring Columbia River water through the lake, and implementation of best management practices.

Recreational opportunities, centered on the county park at Vancouver Lake, were described as "under-utilized." With completion of the lake restoration project, the area was projected to be "the keystone of a total land-and-water recreational complex to serve the region."

From a base of 120,000 people using the park and 120,000 use days estimated for state game lands bordering the park, it was estimated that pre-restoration use had a recreational value of $1.28 million. Post-restoration benefits were estimated at 2.08 million use days per year, equating to a net added economic benefit of $4.66 million (estimated in 1979 dollars). From both visitation and economic benefit perspectives, swimming and biking were viewed as offering the greatest potential, followed by hiking, sightseeing and boating.

From a regional perspective, the EPA report concluded that the completed lake restoration project would "encourage agricultural, commercial, industrial, residential, and recreational development, all of which are of vital interest to Vancouver and Clark County. In addition, dredge spoil can be used to reclaim land for development." As estimated by Richard Gorini, then the Port of Vancouver Planning and Development Director, the project was expected to produce $6 in recreational benefits for every federal dollar invested in the restoration project.[11]

CURRENT SITUATION

As realized, Vancouver Lake's restoration has received attention for its existing and yet greater prospective destination appeal. For example, in recognition of the number of visitors that these

events bring to the City of Vancouver, the Portland Vancouver Rowing Association (PVRA) was awarded a grant in 2017 from the City of Vancouver Lodging Tax Grant Fund.

Recent Initiatives

Even with initial success in 1983-1985, lake restoration improvements were not sufficiently maintained, monitored and adapted to changing conditions, leaving the lake's water quality to degrade over time and allowing the project's predicted silting in to occur. In 2019, FoVL successfully gained a permit from the Washington Department of Ecology to treat the Lake's newest threat – the invasive and non-native Eurasian Watermilfoil plant which was predicted to completely overtake the Lake by 2021. A hoped-for treatment in Spring/Summer 2019 did not materialize due to state procedural issues and early plant die-off due to extensive algae blooms.

FoVL, which had privately raised funds for the treatment including contributions from Clark County and the Port of Vancouver, did successfully treat the EWM in July 2020. Follow-up surveys have deemed the $157,000 treatment a complete success.

Emerging Issues

While the 1983 restoration project of dredging and construction of the flushing channel initially resulted in improved water quality, the operations and maintenance programs for the project were not executed as initially planned. Water depth and quality have declined, with resulting adverse impacts to recreation and tourism appeal.

Normal water flow allows for exiting to the north of Vancouver Lake via Lake River. While designed and built to include 7-foot (84 inch) wide culverts, it has become increasingly clear in recent years that the flushing activity is not proving adequate to maintain water flow at a level conducive to lake health and robust recreation activity.[12]

A more specific concern is that flushing channel flow capacity – as built – may be below what was initially planned as part of the 1983 restoration project. This is exacerbated by upriver tidal flow that pushes downstream Columbia River water back up-stream into Lake River and Vancouver Lake during low-water summer months. The effect is to reduce water flow through the lake at a season most vulnerable to algae and EWM as well as increased concentration of river and lake pollutants.

Taken together, sub-optimal limited water flow coupled with lack of maintenance dredging appears to have had the combined effect of contributing to degraded water quality and eutrophication of the lake over the last several decades. In effect, the lake has yet to reach its full recreation and tourism potential due to resurgent issues with water quality, non-native EWM aquatic infestation and reduced water depth. The result has been reduced recreation activity in recent years – as documented by this report.

III. CURRENT USERS OF VANCOUVER LAKE

Current users of Vancouver Lake include both on-water and shoreside activities. Maximum economic benefit occurs when on-water and shoreside uses are working in tandem.

ON WATER RECREATION

Pivotal on-water organized activities on the lake are rowing and sailing, each considered in turn.

Rowing

The large and relatively calm water expanse of Vancouver Lake makes it an ideal venue for community and competitive rowing activities. The Vancouver Lake Rowing Club is a middle/high school and master age rowing club that uses the lake as its primary training and practice facility. Numerous clubs regionally and along the west coast including Portland college programs also make use of the lake's rowing facilities for training and competitive events. Activities include rowing, kayaking, dragon boating, outrigger canoeing and paddling,

The Rowing Club participates with the Portland Vancouver Rowing Association (PVRA) to host competitive Vancouver Lake rowing events.[13] In addition to providing local rowing training and experience, the Vancouver Lake course has also served as a venue for regional and national rowing events.

The PVRA racecourse at Vancouver Lake venue has been the site of the 1993 US Rowing Masters National Championship Regatta, the 1998 Nike World Masters Regatta, the 2017 Portland Row for the Cure which raises funds for the Susan G. Komen Foundation, and the annual US Rowing Youth and Masters Northwest Regional Championships held every May and June.

The two annual US Rowing events alone have brought about 10,000 athletes, family members, coaches, referees, volunteers and spectators from all parts of the Northwest Region (Alaska, Idaho, Oregon, Washington, Wyoming), also from California and British Columbia to Vancouver each spring and summer.

PVRA Mission

The Portland Vancouver Rowing Association (PVRA) was formed and registered as a non-profit organization on February 27th, 1989 with the purpose of establishing a venue to host regional and local competitions and to help develop the programs, athletes and the sport of rowing in the Northwest Region. Since then, the course has also served as the venue for national events.

PVRA's primary means of accomplishing its mission is by maintaining a fully buoyed, 7-lane, 2000-meter racecourse and race venue at Vancouver Lake in Vancouver, Washington, by coordinating and hosting competitive regattas in partnership with US Rowing and by offering use of the racecourse and PVRA's resources to other organizations for training and competition.

- www.pvra.org,

Sailing

Vancouver Lake also serves as an active setting for sailing – much of which is organized through the Vancouver Lake Sailing Club (VLSC) situated on the east side of Vancouver Lake. The sailing club also provides facilities from which sail boats can be launched.

Formed in 1967, VLSC is billed as a "a family oriented club that has included national champion sailors and even US Olympic team sailors."[14] The club provides sailing education, social and racing events for members. As depicted by the Sailing Club photo to the right, sailing classes are offered for anyone interested in learning how to sail.

With no competing commercial boat traffic or river current, Vancouver Lake is offers sought-after sailing conditions for beginning and experienced sailors.

The club promotes one design centerboard and racing – with fleets including Lightning, Lido, Laser, Fireball and Sunfish. As a member of the US Sailing and the Pacific International Yachting Association (PIYA), VLSC offers an extensive racing program including spring, summer and fall series, a long-distance series, and a summer single-handed series.

An annual PIYA regatta is held annually over two days on the second weekend after Memorial Day. Participation has involved 35 boats from around the Pacific Northwest – for example with 2018 sailing including 5 fleets, a total of 5 races under a variety of wind conditions.

More generally, regatta participation can range anywhere from about 20 boats for smaller single class events up to 65+ boats for larger catamaran and monohull-related events. Regattas with deeper draft boats (of more than about two feet) schedule their events for high water periods on the lake extending into late spring to early summer. As water levels recede mid-late summer, the scope of sailing accommodated is restricted to smaller class sailing activity.

If it were possible to sail year-round across multiple classes, Vancouver Lake could offer substantially greater flexibility to host larger events, especially in the warmer summer months that also benefit from better and more consistent winds. As noted by the Sailing Club Commodore, limited water depth is a "fundamental issue" affecting sailing on Vancouver Lake.

LAKESIDE RECREATION

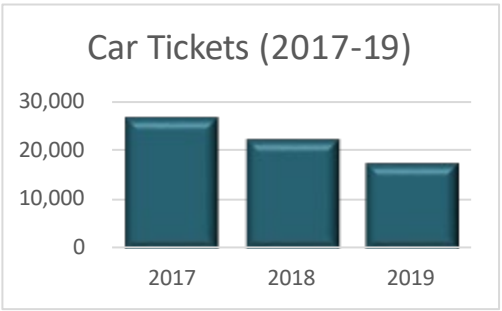
In addition to direct in-water activities, there is considerable activity associated with Vancouver Lake Regional Park. While events ranging from picnics to weddings are shore side, in-water activity also occurs at the park – ranging from swimming to serving as a launch point for paddle-boarding, kayaking, canoeing, and windsurfing.

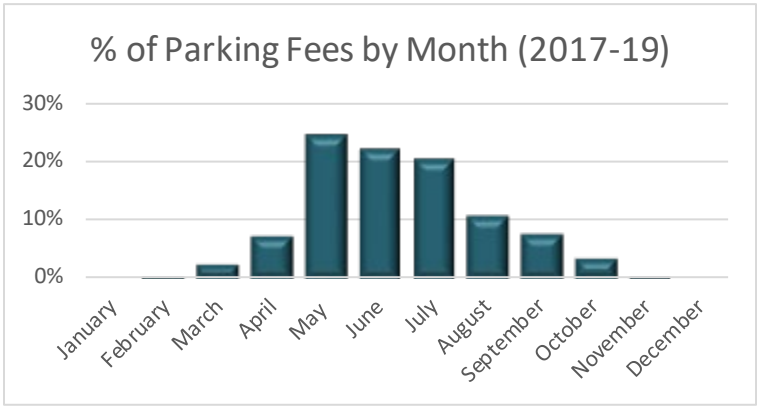
Together with Frenchman's Bar fronting the Columbia River, both parks are managed by Clark County Public Works. Based on information provided by the Parks Administration staff of Public Works, it is possible to obtain information as to the level of activity at Vancouver Lake – in the context of other park facilities throughout Clark County.

Vancouver Lake Regional Park

Parking represents a major source of revenue and activity indicator, with several items of note:

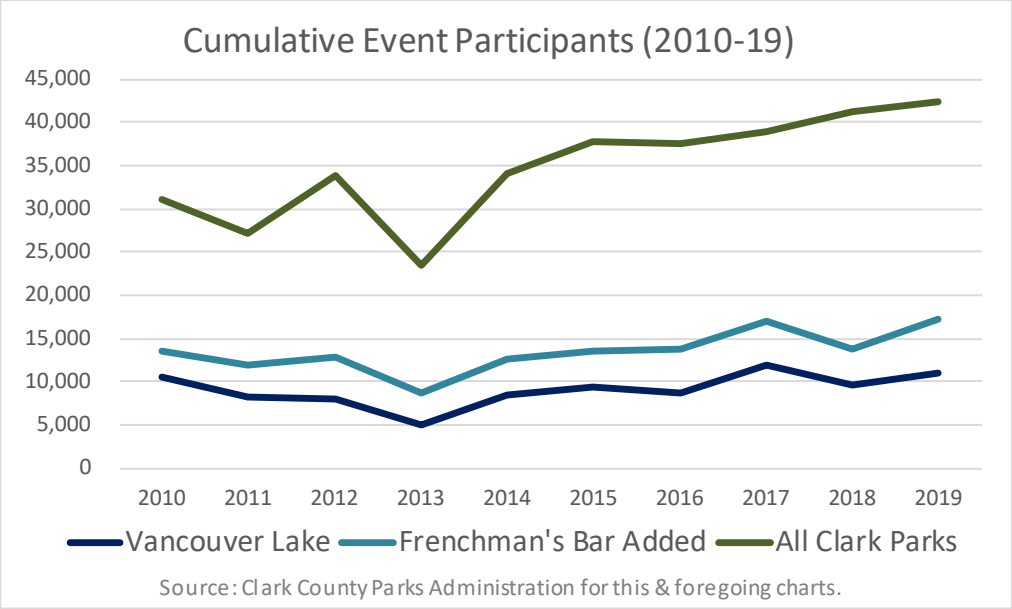
- **Overall parking fee revenue** has declined by 25% in the last three years, from about $97,600 in 2017 to $73,400 in 2019. The largest portion of this gate revenue comes from $3 car parking fees – 71% in 2019, down from 83% in 2017. Other sources of revenue include fees as for motorcycle, RV, bus and trailer parking. Also noted is a regatta 3-day parking fee – increasing from 4% to 13% of sales revenues since 2017.
- C**ar ticketing** at the park has dropped by 35% from about 26,900 transactions in 2017 to 17,500 this past year. This appears to be a reflection of poor water conditions and closure of the lake to swimming for 119 days in 2019, affecting all recreation activity.
- As might be expected, there is considerable **variation in parking fee revenues by month.** About 25% of sales revenue is realized in May with June and July also experiencing strong revenues. August contributes only 11%, other months considerably less.





Another indicator of activity is provided by group event and participant data – available for all parks managed by Clark County.

As shown by the graph to the right, the number of participants in events at the Vancouver Lake Regional Park has hovered in the range of 10,000 +/- per year over the last decade. A few Items are of added note:



- Event activity declined at Vancouver Lake Park in from 2010-13 (with 2013 as a down year for all Clark County parks as well).
- Event activity then picked up in subsequent years, peaking at close to 12,000 participants in 2017. However, as of 2019, the number of event participants was only 6% greater than in 2010. By comparison, the count across all parks was up by 43%.
- Nearby Frenchman's Bar on the Columbia River adds another 6,200 event participants as of 2019 – up by more than double over 2010 levels.
- Taken together, Vancouver Lake and Frenchman's Bar account for nearly 41% of event usage at Clark County Parks (which exceeded 42,000 participants in 2019). The next closest facility is Lewisville Park at 22% of the county-wide park event total.
- The number of events at Vancouver Lake has increased even as the number of participants has plateaued. The number of participants per event has dropped from close to 390 in 2010 to less than 240 as of 2019.
- Frenchman's Bar also has experienced a decline in the number of participants per event. However, average event size has generally increased for other Clark County Parks.
- By event type, Vancouver Lake hosts high proportions of the picnic, sporting, alcohol, and vendor related events at Clark County parks. The lake is under-represented with other park-related activities ranging from weddings to baptisms to camping.

The combination of flat event activity and declining parking revenues has occurred at a time of increased water quality issues at Vancouver Lake. On the plus side is the added contribution that Frenchman's Bar is making as part of a complete lake/river recreation package.

IV. CURRENT ECONOMIC IMPACT

An important objective with this assessment report has been to identify and, where possible, document the economic impact of current recreation activities on and in immediate proximity to Vancouver Lake. This comprises on-water recreation activities including those of locally based sailing and rowing organizations. Also considered is information regarding impacts of Clark County park operations at the Vancouver Lake and Frenchman's Bar regional parks.

The following economic impact discussion is drawn from initial data collection as is most readily available for these key existing recreation user interests. However, it is recognized that this initial analysis does not fully cover all current or prospective uses of Vancouver Lake – whether related to recreation or to longer-term economic development and ecosystem enhancement opportunities. Expanding the scope as described in Section V could be accompanied by a more encompassing evaluation of long-term future potential impacts – for substantially greater Vancouver/Clark County economic benefit than currently realized.[15] .

ON WATER RECREATION

Direct on-water recreation impacts are those associated with non-local spending for competitive rowing and sailing events. As detailed by the Appendix B User Survey, non-local spending for responding clubs is estimated at $3.5-$4.1 million in direct expenditures per year (with a mid-point figure of $3.8 million applied for illustrative purposes). With more limited survey response to date (of three sailing clubs), the direct economic impact of non-local sailing activity for these respondents is estimated at $82,000 per year (a very conservative estimate).

Using these figures, the total non-local spending as reported by rowing and sailing clubs can be estimated at just under $3.9 million year. With a Clark County spending multiplier of 1.5 (for recreation industries), the total economic impact from existing (pre-pandemic) competitive on-water spending can be conservatively estimated as in the range of $5.8 million per year.[16] This includes some undetermined portion of the visitor spending total on the Oregon side of the Columbia River.

In effect, for every $1 spent by direct event participants, another $0.50 is added through indirect spending (from added local business-to-business purchases) together with induced spending (from benefitted household incomes).

LAKESIDE RECREATION

The primary revenue impact documented for the Vancouver Lake Park is for parking which has declined in recent years to $73,400 as of 2019. Additional expenditures from visitors to this park (as well as Frenchman's Bar) are made as for picnic lunches, equipment rentals and purchases – but with no estimates of associated spending to date.

To the extent that park visitors are primarily local rather than non-local, their expenditures are often not included with economic impact estimates. This is premised on the assumption that, if a local resident did not visit Vancouver Lake or Frenchmans's Bar, that person (or group) would be either visiting other parks locally or making other offsetting recreation expenditures elsewhere in Clark County.

In this situation where a resident merely substitutes one Clark County park for another, there is *no net economic gain* to the Vancouver/Clark County economy. However, to the extent that Vancouver Lake is a unique facility for this community, it can be argued that these resident dollars are not automatically spent locally, but rather are more likely to be spent at other comparable water recreation areas outside of Clark County in the absence of a competitive Vancouver Lake presence. To the extent that this is the case, keeping expenditures at home (rather than spent elsewhere) does represent a net gain to the local economy.

In addition, some portion of Vancouver Lake Regional Park use is undoubtedly from non-residents. Spending from these non-residents would represent yet further net gain to the Vancouver/Clark County economy. While likely not as significant an economic impact as from competitive events, these park-related expenditures could be estimated either by park user research or other resident / non-resident (e.g., license plate) counts conducted in cooperation with Clark County.

LOST USE ACTIVITY

As detailed by the Rower Survey (Appendix B), four rowing clubs report that they have had to cancel events in the last 3-4 years. These are the Lake Oswego Community Rowing, Sammamish Rowing Association, and Vashon Island Rowing Club (with another club not identified). Reasons given for cancellation include weather, toxic algae, EWM issue, and inadequate water level.

The regional Dragon Boat Championship (not a survey respondent) held every two years has moved their event from Vancouver to Ridgefield due to issues with water quality and depth. The Paddle for Life event involves 750+ participants with 85-90 event personnel and with another 600-700 attendees (as family, friends and supporters). Also noted is that the Row for the Cure which occurred in 2017 was also planned to happen in 2018 and 2019 but was cancelled due to concerns about lake water quality.

With the exception of the coronavirus pandemic (leading to 2020 cancellations of rowing and sailing events at Vancouver Lake), no cancellations of sailing events in prior years have been noted to date. However, it is clear that improved water depth and quality could greatly expand opportunity for added rowing and sailing activity on the lake in years to come.

V. FUTURE OPPORTUNITES

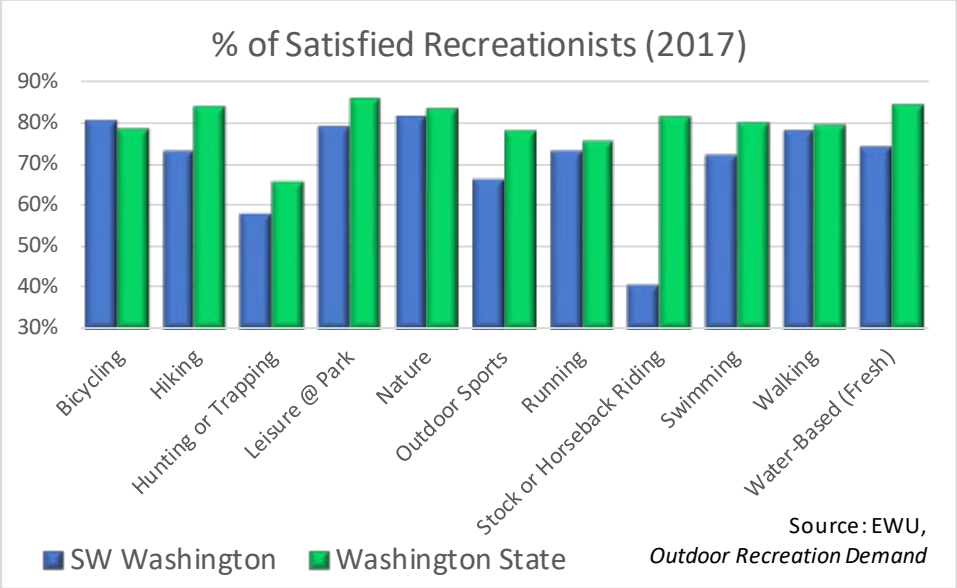
Due to underinvestment and worsening water quality issues, Vancouver Lake has not lived up to its recreation potential – whether on the lake or shoreside. Consequently, this report looks beyond current circumstances to also consider future opportunities – to facilitate added recreation activity and economic impact both regionally and beyond.

REGIONAL RECREATION POTENTIAL

While not the major focus of this report, it is useful to begin with a brief overview of regional satisfaction with outdoor recreation in Southwest Washington. A 2017 statewide assessment of outdoor recreation demand provides comparative data for this region and the entire state.[17]

The Washington Recreation and Conservation Office of the state has been divided into 10 regions. Based on survey data, resident satisfaction can be compared for SW Washington and the rest of the state. The SW region comprises Clark, Cowlitz, Skamania, Klickitat, Lewis, Thurston, and Pierce Counties. While this comprises a relatively large recreation-shed with varied levels of satisfaction across the region, it does provide an initial indication of overall unmet SW regional need that Vancouver Lake improvements could address.

The graph to the right compares the satisfaction of SW Washington residents with those statewide – across 11 activities of current or prospective interest at Vancouver Lake. Overall, levels of satisfaction for outdoor recreation are relatively high across the state – with 80% of survey respondents indicating they are either satisfied or highly satisfied with recreation opportunities in their region.



However, there are differences and SW Washington scores below the statewide satisfaction level for all activities except bicycling. The disparity is greatest for horseback riding with less than a majority of SW Washington residents indicating something less than satisfaction. Below average scores are also noted for hiking, leisure, swimming and water-based recreation. These are activities that could be strengthened with improvements to the Vancouver Lake experience.

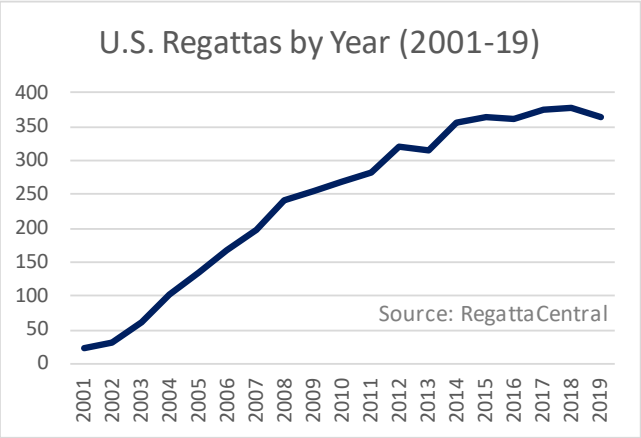
U.S. Experience

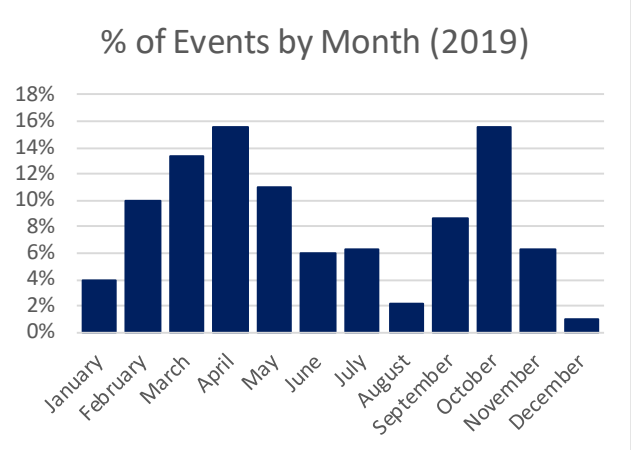
In addition to as-yet unmet resident recreation demand locally and regionally, there is also opportunity to generate added tourism demand by tapping into the west coast and national market for competitive rowing and sailing events. On-the-water experience and opportunities involving rowing and sailing are both considered, in turn.

Competitive Rowing

Since its founding in 1999, a regatta and club management organization called RegattaCentral has maintained records regarding competitive (non-collegiate) rowing events across the U.S. for more than two decades.

National Trends. As illustrated by the graph to the right, the number of non-collegiate competitive rowing events has increased exponentially, from only 22 events in 2001 to 365 as of 2019. Despite this strong overall record of growth, the graph also shows that the number of competitive events has stalled out since about 2014 (with 2017 as a peak year with 374 events). This is due, in part, to lack of new competitive venues in markets outside the east coast that remain largely underserved.





The strongest periods of activity occur during the spring and autumn, providing a nice boost to shoulder season tourism and local community visitor spending.

Other items of note include the following:

- Over 80% of events last for one day, with 14% for 2 days, and the remainder for more.
- While the #1 state (with 35 events annually) is California, the competitive rowing market is generally dominated by eastern seaboard states (including positions 2-8). With 36% of the nation's population, the east coast accounts for 53% of competitive rowing events.
- Of the venues, the most used is Philadelphia's Schuylkill River (19 events), followed by Nathan Benderson Park in Sarasota, Florida. Of the west coast venues, the most cited

are Lake Natoma in Gold River, California (near Sacramento), the Long Beach Marine Stadium, and San Francisco Bay.

- There appears to be no stand-out Washington state facility – with Montlake Cut cited for three events annually. Other Washington state venues are Lake Union and Lake Stevens. Oregon locations used include the Willamette River, Multnomah Channel, and Dexter Lake (southeast of Eugene).
- Vancouver Lake was host to two events listed by RegattaCentral in 2019 – the U.S. Rowing Northwest Masters Regional Championship and the U.S. Rowing Northwest Youth Championship.

Potentially Comparable Rowing Venues. As detailed in Appendix C, there are a number of rowing-focused event facilities across the U.S. that might be considered as potential comparables for Vancouver Lake. While many rowing venues are located on rivers, three lake and bay venues are of particular note:

- **Gold River, California** (Lake Natoma - Sacramento State Aquatic Center) – a nationally recognized competition facility run as a program of the Associated Students of Sacramento State University
- **Oak Ridge, Tennessee** (Oak Ridge Rowing Course) – one of the best known race courses in the U.S. with courses of 1,000-5,000 meters and a major spring training area
- **Sarasota, Florida** (Nathan Benderson Park) – built as part of a 600-acre park and billed as America's premier 2,000-meter sprint rowing course and regatta center

Each of these facilities offers a 2,000-meter course (as with Vancouver Lake) together with extensive shoreside facilities and spectator viewing areas. All three venues have hosted national and world rowing championship events. All are situated in a multi-purpose park setting for general public use as well as providing rowing-oriented classroom/camp and team training programs. Each is run by a non-profit organization with significant event expertise. And two of the three (along with many others nationally) devote resources to documenting their economic impact to host communities.

Sailing Experience

Sailing offers a more diverse experience – including opportunities ranging from cruising to participation in competitive events. And the industry is working to re-position itself to draw in the next generation of sailors as well as continuing to serve long-time participants.

National Sailing Characteristics & Trends. Cruising is the most commonly enjoyed sailing discipline, as with a day or longer sail. Other forms of sailing suitable for competition events include:

- Match racing – with two identical boats racing against each other
- Team racing – involving two teams each of three boats competing with each other

- Para world sailing – cruising or racing in a range of boats on the sea or inland water
- Offshore and oceanic sailing – defined as any offshore race of over 800 miles

All of these with the exception of offshore and oceanic sailing (or use of keeled and deeper draft boats) – are potentially available on Vancouver Lake.

A primary sailing industry organization in this country is U.S. Sailing. The organization has recently completed a *Strategic Plan 2018-2022.* The plan includes a statement of "Our Vision for the Future of Sailing," which reads as follows:[18]

> Sailing has become a rapidly growing sport in the US, driven by innovations in access and education, and inspired by American success in international competition. The diverse sailing community is aligned around common goals for the sport. Sailing has been embraced by the public as being inspiring, inclusive and accessible.

In 2010, there were approximately 1,300 yacht clubs in the U.S. – of which 63% were year-round and 37% seasonal. A majority of yacht club members were involved in day sailing or cruising but with nearly half (48%) having racing sailboats and smaller proportions of 15% each with power boats or members for social reasons. Demographics of sailing enthusiasts – represented by membership in U.S. Sailing – were largely older (56% over age 50), with high incomes and in many cases owners of multiple boats.[19]

Five years later, a 2015 state of the industry report on sailing indicated that the U.S. market comprised about 3.9 million sailing participants across the U.S. Of these, over two-thirds (69%) were casual participants (sailing 1-7 times per year), with 31% as core participants (sailing 8+ times per year). Participation was increasing by about 1% per year. By region of the U.S., the south Atlantic states had the highest level of total sailors with the three Pacific Coast states coming in at #2 (comprising nearly 20% of the national total).

A major challenge of this past decade has centered on the question of how to attract younger millennials to sailing. This is reflected in the current strategic plan of U.S. Sailing which notes that: "Sailing is at an interesting turning point – we have a successful and storied past, but a somewhat unclear future."

Like other local organizations, the national sailing organization has restructured operations to be more "customer-facing." And more specifically, the plan recognizes the need to "make it easy for new sailors – regardless of age – to get involved and at the same time keep the passion of current sailors alive."

Vancouver Lake offers an ideal setting for beginning sailors as well as for experienced veterans.

Potentially Comparable Sailing Venues. Sailing for sport or competition occurs across a wide range of fresh- and salt-water venues. As the sailing industry repositions for the next generation, three approaches are noted as potentially bracketing options for consideration:

- **Eugene, Oregon (with the Eugene Yacht Club at Fern Ridge Reservoir)** – has become one of the top freshwater sailboat racing venues – including moorage, camping, and clubhouse facilities – regionally situated on a 9,000 acre, multi-use reservoir managed by the U.S. Army Corps of Engineers as the lake-oriented case study venue closest and potentially most comparable to Vancouver Lake.
- **Corpus Christi, Texas (led by the Corpus Christi Yacht Club)** – has catapulted its way to international attention by hosting the 2018 Youth Sailing World Championships, in a tightly clustered event and support area, and as the first major championship venue to be accompanied by a major sustainability initiative.
- **Sail GP (launched in 2019 with events in 5 host cities)** – is an international sailing competition using high performance catamarans capable of 50+ knot speeds, focused in its launch year on 5 high profile cities globally, on tight courses visible shoreside, and with plans to expand to a 10-event competition in the future.

Unlike rowing, sailing venues appear to have paid less attention to documenting economic impact in recent years. However, that may be changing as new venues and formats emerge to re-invigorate what has become are relatively staid and aging market.

Added information regarding these and other potential sailing comparables is provided with Appendix C to this report.

As noted, economic impact information is provided for some of the rowing and sailing comparables. This information is summarized with discussion of prospective economic impact which now follows.

PROSPECTIVE ECONOMIC IMPACT

Impact estimates for major rowing and sailing facilities vary widely. Examples detailed by the Appendix C discussion of Potentially Comparable Venues includes impact estimates for **rowing centers** that include:

- $2 million per year to the community and surrounding areas for the Oak Ridge Rowing Course in Tennessee
- $6 million impact for regattas in 2015 of the Caspersen Rowing Center in Princeton, New Jersey – a facility that has hosted National Team selection and Olympic Team trials events
- Much higher annual estimate of $35 million for the intensively used Nathan Benderson Park regatta center in Sarasota, Florida
- Single-event impacts going from $1 million per event for a state park, fully buoyed course in Nashport Ohio to $47 million for the annual Head of the Charles Regatta in Cambridge, Massachusetts – and with the Head of the Hooch race in Chattanooga at nearly $5 million

Economic impact data for **sailing facilities** does not appear to be as widely collected. But from case studies reviewed, the following statistics are noted:

- $13.6 million estimated as far back as 2005-06 for 1.5 million visitors per year to park facilities to Fern Ridge Reservoir near Eugene, Oregon – also home to the Eugene Yacht Club
- Estimated $1-$2 million impact of a week-long 2018 Youth Sailing World Championships hosted by the Corpus Christi Yacht Club in Texas
- $115 million (or $23 million average per venue) impact of the SailGP minimal draft catamaran sailing competition first held in 2019 across five cities on three continents (Sydney, San Francisco, New York, Marseilles, Cowles-UK)

Top US Rowing Events

Major rowing events in the U.S. include college rowing, CRASH-B Sprints, Dad Vail, Eastern Springs, Harvard-Yale, Head of the Charles (featured below), Head of the Fish, Head of the Hooch, Head of the Ohio, Head of the Schuylkill, Poughkeepsie, Stotesbury, NCAA Division I, International Rowing Association and American Collegiate events.

- www.en.Wikipedia.org

Head of the Charles

Started in 1965, the *Head of the Charles Regatta* in Cambridge, Massachusetts is now billed as the world's largest 2-day rowing event. Currently, more than 11,000 athletes from around the world compete in 61 different race events every October.

The event draws up to 400,000 spectators, with youth, collegiate, adult and masters races. The event is supported by over 1,400 volunteeers together with boat clubs, colleges and universities, and the state Department of Conservation and Development.

- www.regattacentral.com

These examples illustrate the range of what conceivably might be targeted for Vancouver Lake.

THE VANCOUVER LAKE RECREATION OPPORTUNITY

Opportunities can be summarized in terms of short-term, longer-term and area-wide recreation and related economic development. Potential improvements have been identified from sources including venue operators (Clark County Public Works, Vancouver Lake Rowing Club, Vancouver Lake Sailing Club) and from rowing and sailing club surveys. Also reviewed is preliminary area-wide planning by FoVL and potential private interests. A first take as to a preliminary listing of improvements suggested is provided by the following chart.

Vancouver Lake Recreation Opportunity Improvement Listing (Preliminary)

Type of Recreation Improvement			
In-Water	**Shoreside Rowing**	**Shoreside Sailing**	**Park**
Short-Term – focus on improved water quality, depth & predictable year-round access			
• EWM/algae control • Improved maintenance and increased flushing channel flow from Columbia River into and thru Vancouver Lake	• Expanded/custom launch/recovery docks • More boat/club storage (temporary boat racks) • Viewing area Restrooms/showers • Food service capacity for competitors • Expanded parking	• Improved access/entry • Food service capacity for competitors	• User surveys • Splash pad/spray park • Covered/enlarged playground & Wi-fi • Concessionaires for food service & rental of recreational equipment (in busy months)
Longer-Term – marketing for competitive events regionally & nationally			
• Increase water depth (to 3+ meters optimum) • Watercraft passage from Columbia River • Consider removal of island created in 1980s	• Aquatic center (office, viewing, classroom, meeting/event rental) • Boathouse expansion • Finish tower	• Park environment for boat launches • Potential marina	• Recreation & competition-level sports fields • Event viewing area
Area-Wide Vision – for supporting nearby lodging, dining, marina, tech-industrial, possible residential			

AREA-WIDE ECONOMIC DEVELOPMENT & CONSERVATION

If on-lake and lakeside recreation takes hold, added demand will also emerge for supporting land uses – either on or in close proximity to Vancouver Lake. As the lake becomes more widely perceived as an amenity, uses potentially attracted could include lodging, dining, marina, residential, and tech-industrial.

While this report is focused on Vancouver Lake recreation, it is recognized that consideration of recreation enhancement ideally would fit into a **larger picture** for Vancouver Lake area economic development and conservation. A *Vancouver Lake Visioning* process led by FoVL is already underway in collaboration with the design firm of SERA Architects. Other privately-led initiatives are also being advanced – including initial discussion with potential public partners.[20]

There are a number of steps likely required to formulate a detailed area-wide subarea of master plan – all well beyond the scope of this initial economic impact assessment. However, at this preliminary juncture, it is useful to comment on how existing property ownerships coupled with private development interests might affect this broader planning process.

Ownerships

With the State of Washington DNR as the owner of the lakebed and at significant tidelands, there also are five distinct public and non-profit owners of significant land areas around the lake and nearby:

- **Clark County** owns most of the land on the west side wrapping to the south as well as many of the shallower parcels on the east side extending to just beyond the Burnt Bridge Creek outlet. Land has been purchased and being held for park (including lakeside recreation), conservation and environmental enhancement purposes.
- West of the lake and SR 501 (NW Lower River Road) are ownerships of the **State of Washington** – intended as wildlife habitat. The state also owns much of the land on the south side of the lake – together with County land serving as a buffer between the lake and Port ownerships.
- West of SR 501 and extending to the flushing channel are properties of the non-profit **Columbia Land Trust**. The Trust is also purchasing a major remaining undeveloped parcel of Erickson Farms on the lake's eastside.
- South of the flushing channel are the marine terminal and heavy industrial activities of the **Port of Vancouver** – situated river-side of SR 501 except for the newly developing Centennial Industrial Park located further south and east, more removed from the lake.
- Southeast of the lake are holdings of the **City of Vancouver** – that have been variously considered for roadway extensions, future industrial and/or open space use.

Economic Development Opportunity & Challenge

As noted, residential, lodging, dining, office and tech-industrial are many of the same activities that are drawn to Vancouver's emerging mixed-use waterfront on the Columbia River at the southern end of the downtown. The differences are that lakefront development, if allowed, would likely be lower in scale and density, but might offer better direct access to diverse on-water recreation opportunity (not possible on the Columbia).

While potentially attractive from a private investment perspective, challenges associated with lakefront development are formidable – essentially two-fold:

- As noted, most of the land directly on or in close proximity to the lake is in public or non-profit ownership – purchased primarily with the intent of preservation for conservation and open-space use (together with Port industrial uses, further removed).

- Also, most of the shore-side land is zoned for park, open space and/or wildlife uses – requiring land-use re-designation if lake-front property were to be developed for residential or employment-related purposes.

For economic development to be actively considered, a collaborative process between the key public/non-profit owners will be essential – also involving industrial interests more removed from direct lakeside access. One catalyst opportunity encompassing a broad range of uses extending around the lake is represented by the Lewis and Clark Trail Concept – as illustrated for the Vancouver Lake area below.

Lewis and Clark Trail Concept – Vancouver Lake Area

A broader vision for Vancouver Lake area development could involve not only enhancement of existing and new public recreation/sport opportunities, but also address potential for other complementary private development – as with marina, dining, lodging, high wage tech-campus, service-retail, residential and mixed use development. Also addressed should be potential for area-wide conservation and ecosystem enhancement – possibly creating additional wetland and other habitat including improved linkage to the Ridgefield National Wildlife Refuge. In addition to the economic outcomes identified in this report, other values to consider include increased area residential and livability values, improved recreation and health, transportation accessibility, historic preservation and community identity.

Any resulting Vancouver Lake subarea or master plan will need to determine what areas are appropriate for private development, marketable uses and scale of development, and mechanisms for lease or public-private partnership – assuming that many if not most public ownerships are to be retained in perpetuity. At the same time, attracting private investment and enterprise will be instrumental to creating the added revenue base needed to support the full range of infrastructure and ecosystem improvements critical for long-term sustainability.

Summary Potential

To summarize, several observations can be made about the greater Vancouver Lake economic development and conservation potential:

- A successful strategy should be expected to balance a broad range of conservation and economic development values in a manner that meets public agency owner objectives, expands recreation opportunity and achieves broad community support.
- Economic development initiative ideally will be led by achievable on-lake and shoreside recreation opportunities.
- A recreation-led agenda can proceed ahead of but should serve to drive the longer term, area-wide economic development plan for the Vancouver Lake benefit area.
- Finally, aim for economic impact that can leverage the scale of public and private investment required for successful, impactful and sustainable lake recreation together with supportive shoreside development.

As a place of on-going interaction between the natural environment and human gathering dating back thousands of years, Vancouver Lake represents perhaps this region's signature asset, unduplicated but with its full potential yet unfulfilled. Pivotal to achieving the potential is the need to build from the successes while addressing the shortcomings of the initial 1983 restoration project.[21]

Re-establishing the lake's ecological functioning within the Columbia River system can serve to draw new and expanded recreation opportunities of importance to community health and well-being. The lake's recreational and aesthetic significance may then leverage private investment essential for multi-generational economic and ecosystem sustainability.

APPENDIX A – PREPARER PROFILE

This economic impact report has been prepared on behalf of the Friends of Vancouver Lake (FoVL) by the economic and development consulting firm E. D. Hovee & Company, LLC (E. D. Hovee).

Since 1984, E. D. Hovee has provided consulting services for a wide range of public agency, non-profit and private clients primarily, though not exclusively, in the Pacific Northwest states of Washington, Oregon and Idaho – as well as nationally. Assignments conducted have included market and feasibility studies, economic impact analyses, due diligence reviews, and strategic business development planning – covering a diverse set of industrial, commercial, residential, cultural, tourism-destination, recreation and related major capital investment projects.

E. D. Hovee has extensive experience working with both passive and active recreation and related destination projects. Representative assignments have included:

- Market and feasibility studies for marina and related on-water facilities in Vancouver, Skamania County, Portland, Rainier, Tacoma, and Chelan
- Youth sports field needs assessment for Vancouver and Clark County parks
- Economic impact analysis of proposed sports fields in Woodland
- Market and feasibility assessments for uses ranging from cargo-handling facilities to mixed use development on behalf of Port districts in Vancouver, Ridgefield, Camas-Washougal, Chelan, Pasco and Portland
- Market and financial feasibility assessments for fairgrounds improvements in Clark, Cowlitz, Lewis, and Kittitas Counties
- Market and economic impact assessments leading to development of Skamania Lodge in the Columbia River Gorge National Scenic Area
- Economic impact of the international Sydney-Anacortes ferry
- Business case for the 2016 USATF/IAAF indoor world track and field championships in Portland
- Feasibility evaluation for a potential Vancouver/Clark County minor league and multi-use baseball stadium
- Independent feasibility review for extended lease on publicly owned Safeco Field (now T-Mobile Park), home of the Seattle Mariners

APPENDIX B. VANCOUVER LAKE USER SURVEYS

This appendix provides results of a survey conducted from two primary sets of users (including competitive events) on Vancouver Lake – rowing and sailing clubs. Results are reported in turn.

ROWING CLUB SURVEY RESPONSES

In mid-February, an electronic/web-based survey was conducted of rowing clubs who have held events or trainings at Vancouver Lake in recent years. The survey was conducted for the purpose of obtaining user information regarding use of the lake, event participation, and issues or suggestions for improving the Vancouver Lake rowing experience.

The Vancouver Lake Rowing Club emailed clubs encouraging participation with a link to the survey web site. Twenty-five responses were received from 19 separate clubs extending from Vancouver, BC to Palo Alto, CA.[22] What follows is a summary of responses by question.

Types of Vancouver Lake Use

Each of the 19 clubs indicates that it participates in competitive events at Vancouver Lake. Six of the clubs also make use of Vancouver Lake and facilities for training and three for class instruction.

Typical Year Competitive Events

The 19 responding clubs participate in an average of 2.3 events per club per year in events ranging from one to five days in length – averaging 2.9 days per event:

- The 19 clubs have involved a total of approximately 4,485 event participants – averaging 236 per club and 104 across each event in which a club participates[23]
- 15 clubs bring a total of 340 event officials and staff to the events in which they participate – averaging 23 per club over the course of a season
- 18 clubs indicate that friends, families, and others totaling 5,310 also attend – averaging 295 per club and 124 for each event in which a club participates
- Taken together, these 19 clubs account for an estimated 10,135 typical year attendees – as direct event participants, official/staff and other attendees.

Non-Local Participation, Lodging & Spending

The 19 organizations report a range of 24-100% non-local participants, officials/staff and other attendees are coming from outside of the Vancouver-Portland metro area. Eleven clubs indicate that virtually 100% of those attending are non-local; the average across all 19 clubs approaches 90%. Of the non-local visitation, length of stay (in nights) ranges from two to four nights – averaging three nights.

Spending patterns appear to depend, in part, on whether club participation and associated attendance consists more of youth or adults. The range of spending per day is from just over $30 to more than $210 – averaging $125 per person per day. For the responding clubs, this amounts to an estimated $3.5-$4.1 million for these club's typical year events (depending on whether unweighted or weighted averages are applied).

Events Cancelled

Of the 19 clubs, four indicate that they have had to cancel an event in the last 3-4 years (excluding pandemic-related cancellations for the current 2020 season). Reasons given for past cancellations include weather, algae, mil-foil issue, and inadequate water level. *Note:* this does not count the move by Dragon boat races from Vancouver Lake to Ridgefield, also due to water quality and EWM issues.

Satisfaction with the Vancouver Lake Experience

Rowing clubs surveyed were asked to rate eight different factors in terms of satisfaction with the Vancouver Lake experience – with #1 being the highest ranking, #8 the lowest.

It is noted that not all respondents ranked every factor. Results have been tabulated based on the rankings as provided by respondents.

Composite satisfaction rankings (and average rank) are shown as follows:

#1 – Location and/or convenience to access (2.3 average rank)
#2 – On-water experience (3.3 average)
#3 – Shoreside facilities and infrastructure (3.7 average)
#4 – Weather (3.9 average)
#5 – Cost of event compared to alternative locations (4.18 average)
#6 – Area lodging, dining and services (4.21 average)
#7 – Water depth and quality (4.3 average)
#8 – Assistance in facility and event scheduling and logistics (4.8 average)

While there are clear differences in overall levels of satisfaction with the features listing, it is also noted that there sometimes were considerable differences in rankings between different clubs.

Improvements To Draw More Events

Respondents were asked about improvements that their organization would suggest as most important to draw more events and provide a higher quality Vancouver Lake experience. Of the 19 clubs, 16 provided a response to this question.

Over half of the comments related to needed improvements in lake water quality, depth and EWM control. Comments are listed verbatim and loosely organized by general topic as follows:

- Dredge out the lake and keep it usable for water activities
- Remove the weeds in the lake, (provide) food at the venue NW Regionals
- Water quality
- Improve water quality to allow rowing and other water sports to continue to exist on the lake
- Keep water balanced without excessive EWM so able to row
- Better water quality, more lodging options
- Make sure the water is clean and safe to be in/on/and around
- Water quality, clean up EWM in the Lake, more food vendors at the lake for regattas
- Reliability; knowing the race course will be available long term
- Launching docks
- Temporary boat racks
- More bathrooms
- Offer more regattas
- It's a fabulous race course – having a 2K (2,000 meter) buoyed course is so important for rowing in the Pacific Northwest
- None - it's just fine as is, attempts to improve could have bad side effects
- Venue is great

Added Comments

As a final question, those surveyed were given the opportunity to provide added comments. Eight did, with comments reported verbatim as follows:

- Please don't let this lake die! This is a defining moment. Either something gets done now to improve this lake's water quality or the opportunity may be lost.
- We come to row and our trailers are awkward there. Letting us park along the road or keeping the entries easy to maneuver in is helpful.
- Great venue. I grew up in Vancouver (Hudson's Bay '69) and really cool park.
- We love racing and doing our spring break camps on Vancouver Lake and would love to see it live a long happy life.
- The Northwest needs a national-level rowing race course to attract top US Rowing regattas.
- Keep up the great work. OK to charge visitors another $1 or $2 for parking. Make sure the lake gets taken care of (dredging / EWM abatement).

- It is a wonderful lake!
- Keep up the good work.

SAILING SURVEY RESPONSES

As with the rowing surveys, The Vancouver Lake Sailing Club emailed clubs encouraging participation with a link to the survey web site. Surveys were initiated later for sailing just as the coronavirus pandemic was taking hold – with much lower resulting response.

With four surveys returned from three clubs, results should be viewed as very preliminary and subject to revision with future surveys as might be conducted. However, some worthwhile observations can be drawn from surveys completed to date.

Types of Vancouver Lake Use

As with the rowing clubs, all three sailing club respondents indicate that they use Vancouver for competitive events. The Vancouver Lake Sailing Club also uses its lakeside property for training and classes.

Typical Year Competitive Events

Respondents to date participate in 1-4 events ranging from 2-3 days per event. On average, sailing events tend to involve fewer participants than for rowing events:

- Direct participants over the course of season at Vancouver Lake average about 115 per club or just under 60 per event
- Officials and staff average another 7 per club per event.
- Friends families and others add another 40-45 per club per event
- Taken together, these three respondent clubs involved over 640 attendees in a season

Non-Local Participation, Lodging & Spending

Respondents indicated that anywhere from 30-70% of attendees are non-local, requiring anywhere from 1-3 nights of lodging in the Vancouver area. With per person spending ranging from $100-$150 per night, total spending from non-local visitors for these three clubs is preliminarily estimated at nearly $82,000 per year.

Events Cancelled

Unlike rowing events which have been cancelled, none of the three sailing clubs indicate that they have cancelled an event in the last 3-4 years (excluding the current 2020 season).

Satisfaction with the Vancouver Lake Experience

As with the rowing survey, not all organizations rated all of the eight factors considered. Composite satisfaction rankings from responses to date are summarized as follows:

- Highest ranked – Location and/or convenience to access the lake, weather, and shoreside facilities
- 2nd tier ranking – on-water experience and cost of event
- 3rd tier ranking – water depth and area lodging/dining/services
- Lowest ranked – assistance in facility and event scheduling/logistics

Improvements To Draw More Events

As with the rowing club survey, sailing club respondents were asked about improvements that their organization would suggest as most important to draw more events and provide a higher quality Vancouver Lake experience. Comments of sailing clubs focused on needs for greater water depth and quality, with individual comments noted as follows:

- Cleaner water and more depth!
- Several feet of cleaner water in the lake from spring to fall
- Combat toxic algae and dredge lake so there is more sailable area

Added Comments

One added comment that points to the lake's future potential was received – noted in its entirety:

> People love coming to VLSC for the hospitality and atmosphere. Van Lake is a very suitable piece of water for holding sailing competitions and we especially like that there is no current, commercial traffic, or motor boats to contend with.

APPENDIX C. POTENTIALLY COMPARABLE VENUES

This appendix provides information on rowing and sailing venues considered as potential comparables for what might be considered in the years ahead at Vancouver Lake. Three one-page detailed profiles are provided each for rowing and sailing – together with additional summary information for other venues of potential interest.

ROWING COMPARABLES

On the following three pages are provided one-page profiles of potential rowing comparables for what might be considered for Vancouver Lake:

- Gold River, California (Lake Natoma - Sacramento State Aquatic Center)
- Oak Ridge, Tennessee (Oak Ridge Rowing Course)
- Sarasota, Florida (Nathan Benderson Park)

Eight other facilities and racing venues that are often cited are also summarized with this appendix. The first five are the rowing-focused venues and the other three are mixed non-motorized/motorized venues. Economic impact information is reported, as available.

Rowing-Focused Venues/Events:

- Cambridge, Massachusetts (Head of the Charles Regatta)
- Chattanooga, Tennessee (Head of the Hooch Race)
- Nashport, Ohio (Midwest Scholastic Rowing Championship)
- Princeton, New Jersey (Princeton National Rowing Association)
- Saratoga Springs, New York (Saratoga Rowing)

Mixed Non-Motorized/Motorized Venues:

- Long Beach, California (Long Beach Marine Stadium)
- Lake Havasu, Arizona (Motorized boating economic impacts)
- San Diego, California (San Diego Crew Classic)

Gold River, California (Sacramento State Aquatic Center)

Situated on Lake Natoma near Folsom, California, this aquatic center was established in 1981 to "provide high quality boating and safety programs through education, recreation, and competition.[24] The aquatic center is a program of the Associated Students, Inc. of Sacramento State University.

Facility Features. As a nationally recognized competition venue, Lake Natoma and the Sac State Aquatics Center (pictured) has served as co-host for the 3-day collegiate NCAA/International Rowing Association (IRA) National Championship Regatta in 2009, 2013, 2017 and 2019. The IRA format involves a 2,000 meter, 6-lane course.

Other events regularly held at Lake Natoma include the West Coast College and the Pac-12 conference rowing championships.

Open to the general public, the shore-side center is situated on 8 acres featuring a 2-story aquatic center with classroom and meeting space together with site features including beach/viewing area, picnic tables, barbeques, four docks, volleyball courts, and parking.

Organization. The Sacramento State Aquatic Center is a cooperative operation of the Associated Students Inc. of California State University, Sacramento, the University Union of Sac State, California Division of Boating and Waterways, and the California Department of Parks and Recreation.

Utilization. In addition to hosting recognized competitive events, the aquatic center is a National Boating Safety Center offering classes for university students and the general public, camps, facility reservations, team building youth groups and equipment rentals. As a multi-use facility, the aquatic center offers reservations for events that can be hosted on the beach area as well as upstairs meeting rooms.

Oak Ridge, Tennessee (Oak Ridge Rowing Course)

Situated on Melton Lake, Oak Ridge offers one of the better-known rowing courses in the U.S.[25]

Facility Features. Oak Ridge is touted as providing 30 miles of flat water and an eight-lane, 1,000 and 2,000 meter competition buoyed race course. In addition, 4,500 and 5,000 meter head race options are also available.

The Melton Lake venue supports both small and large events, with a sheltered embayment with room for more than 60 team trailers, and six separate launch and recovery docks. A dedicated athlete area is adjacent to the launch/recovery docks, and a large spectator area provides teams and supporters with a shaded view of the head and sprint race finish areas.[26] The facility is viewed a good location for rowing training camps regattas and classes for introduction to rowing. Weather allows for an extensive spring training program catering to teams from across the U.S.

Organization. The Oak Ridge Rowing Association (ORRA) was founded in 1978 to promote the sport of rowing in Oak Ridge and East Tennessee. The tax-exempt membership organization is governed by a 9-15 member board of directors. ORRA partners with the City of Oak Ridge Convention and Visitors Bureau and Explore Oak Ridge to assist visiting teams with their lodging accommodations.

Utilization. Regattas held have included the NCAA Women's Rowing National Championships, U.S. Rowing Championship events, Conference Championships, and a range of other regattas at the high school, collegiate and masters levels. ORRA is home to an Atomic Juniors and to Masters rowing teams. In addition, Melton Lake is known as a spring training site for high school and college programs drawing participants from the west to east coasts.

Economic Impact. The City of Oak Ridge estimates that rowing activities generate and estimated annual impact of $2 million per year for the city and surrounding communities.[27]

Sarasota, Florida (Nathan Benderson Park)

Nathan Benderson Park is billed as "a unique 600-acre community park that includes North America's premier 2,000-meter sprint rowing course and a regatta center."[28] Located just west of I-75 and opened in 2009, the park centers on a 400-acre lake. Built by Saratoga County on a former excavation pit, funding included a $1 million donation from a family for whom the park was named to become a health and wellness destination.

Facility Features. With a world class (FISA Class A) 2,000 meter sprint course, the park includes rental facilities where families and visitors for families to get on the water in a kayak, rowboat or stand up paddleboard. A 3.4 mile trail loop around the park is used for 5K races.

Subsequent park phases have included construction of a finish tower (recently completed) and planned boathouse together with additional park infrastructure and amenities. The Finish Tower has rental space available private parties, conferences, and banquets.

Organization. Suncoast Aquatic Nature Center Associates Inc. (SANCA), is a not-for-profit 501c3 business created to manage the Park as a community/public asset and world-class, multi-use sports venue. SANCA operates the park as a world class event center and team training site, providing outreach programs through recreation, safety training, education and volunteering.

Utilization. Nathan Benderson Park is home to a range of international championships – with events ranging from dragon boat, canoe and kayak races to triathlon and cross-country events, 5- and 10k runs, and corporate training events. Programs include boat paddling, ChiWalking, yoga and summer camps. In 2018, the park hosted 48 events attended by over 120,000.

Economic Impact. Economic impact of Benderson Park was $34.8 million in 2019. Peak year was 2016-17 at $51.3 million with hosting of the World Rowing Championships ($28.7 million).[29]

Other Rowing Examples

Eight other examples of facilities that have been and are used for rowing activities are briefly described below. The first five are rowing-focused while the other three have powerboat activities as part of the on-water recreational mix.

Rowing-Focused Venues:

- **Cambridge, Massachusetts** – is home to the Head of the Charles Regatta, one of the most attended two-day rowing events in the U.S.[30] Data available for the 2013 event indicates participation of 9,000 rowers plus 1,400 volunteers, drawing 400,000 spectators. The event was estimated to contribute $47 million to local businesses and hotels plus generation of $4.8 million in local and state tax revenue. Premiere sponsors have included BNY Mellon, Greater Boston Mini Cooper, Brooks Brothers and the EMC corporation.
- **Chattanooga, Tennessee** – hosts the annual fall Head of the Hooch race, cited as the nation's 2nd largest rowing regatta, held on a 5,000-meter course on the Tennessee River. An estimated 2,000+ boats race over two days – with participants from over 200 organizations and crew from more than half the states in the U.S. As a head race, boats start sequentially by event and race against the clock.

  As of 2010, the 2-day event involved an estimated 1,922 boats competing in 79 races – with 9,248 rowers and coxsains.[31] This has been accompanied by a total influx of 13,000 people (including rowers) – generating an estimated economic impact estimated at $4.75 million. The venue's location also offers the unique ability for teams to walk from their hotel room to the site and ability for viewers to watch the last 1,000 meters.

  An updated estimate was made for 2015 by the Chattanooga Sports & Events Committee, noting 2,118 boats combined for two-day total racing in 80 events, with economic impact estimated at over $5 million.[32] An estimated 80% of competitors are high school and college crews.
- **Nashport, Ohio** – in partnership with the state park system has installed a fully buoyed race course together with necessary support infrastructure to support championship caliber racing including the Midwest Scholastic Rowing Championships. When seeking funding, the Midwest Scholastic Rowing Association in 2012 cited data from the Ohio Department of Natural Resources as estimating that rowing regattas in Ohio generate an economic impact of approximately $1 million per regatta. This was despite the acknowledgement that "there are a limited number of venues in the Midwest and none meet the characteristics of a national or world quality location."[33]
- **Princeton, New Jersey** -- The Princeton National Rowing Association conducted an economic impact study by the Princeton National Rowing Association together with the Princeton Regional Chamber of Commerce and Convention & Visitors Bureau for major rowing regattas that took place in 2015.[34] Recognized as one of the top rowing venues in the country, Mercer Lake and Mercer County Park is home to the Caspersen Rowing

Center and has hosted U.S. National Team Selection events including five Olympic Team Trials for rowing starting in 1988. In 2015, the regattas at this venue accounted for 3,254 direct and 4,349 total jobs (with economic multiplier), together with $6.1 million and direct and $10.16 million in total sales and $569,402 in local and state taxes.

- **Saratoga Rowing in Saratoga Springs, New York** -- is home to the Fish Creek 1,500 meter, 10-lane buoyed course. Saratoga Rowing hosts a minimum of five regattas a year, two in the fall, the Tail and Head of the Fish along with three spring races, the Saratoga Invitational, the Section II Rowing Championships and the NYSSRA championships. As of 2015, it was estimated that the regattas account for more than $5 million dollars annually in economic impact to the Saratoga Springs area.[35]

Mixed Non-Motorized/Motorized Venues:

- **Long Beach Marine Stadium, California –** is a marine venue created for the 1932 Summer Olympics in Los Angeles, the first constructed rowing course in the U.S. In recent years, the venue has also hosted Olympic trials and remains an important training and competitive rowing center – including for National and Olympic teams. A shore side viewing stadium seats 500+. The facility is open daily for rowing and also for water-skiing and boat launches. In addition to the Long Beach Rowing Association, other events hosted have included the Golden West Water Ski tour and International Ski Jet Association.[36]
- **Lake Havasu, Arizona** – is a NW Arizona community for which the economic impacts of (primarily motorized) boating visitors (non-residents) has been evaluated in some detail. A 2016 report estimates that boating visitor spending of $154 million annually supports over 2,000 direct, indirect and induced jobs, generating more than $63 million in income in Lake Havasu City – also adding over $30 million per year in federal, state, and local tax revenue. Accommodation and food services is identified as the most benefitted industry group, accounting for one-half of total employment and 38% of total income impacts.[37]
- **San Diego Crew Classic, California** – since 1973 a premiere 2-day, 100+ race spring rowing regatta with more than 4,000 athletes.[38] The regatta brings together athletes from novice to Olympian. Thousands of spectators watch the races on the popular electronic *Jumbotron* – showing races from start to finish. Also known as a social gathering for enthusiasts to "enjoy great local food, a beer garden with San Diego's famous local craft breweries, and shopping all while soaking in Mission Bay, just a mile from the beach." Includes Vendor Row with food court, merchandise tents, trade show, beer garden and Jumbotron. A downside to this venue is that, as a mixed-use body of water, rowers are in the adverse position of having to contend with wakes caused by power boats also on the water. (Note: this is also noted as a problem with rowing events on Lake Washington and Lake Stevens in Washington state).

SAILING COMPARABLES

On the following pages are provided three one-page profiles illustrating the range of potential comparables as might be considered for Vancouver Lake:

- Eugene, Oregon (Eugene Yacht Club at Fern Ridge Reservoir)
- Corpus Christi, Texas (Corpus Christi Yacht Club)
- SailGP (Five Host Cities Globally)

In addition, summary information is provided for three other west coast sailing venues and a broader scale marina economic impact resource.

Other West Coast Sailing Venues of Note:

- Portland, Oregon (Willamette Sailing Club)
- San Diego, California (Mission Bay Yacht Club)
- San Francisco Bay, California (Richmond Yacht Club)

Marina Economic Impact Resource:

- Association of Marina Industries (Marina Impact Study)

Eugene, Oregon (Eugene Yacht Club – Fern Ridge Reservoir)

Boating activities in the Eugene-Springfield area are largely focused on Fern Ridge Reservoir, a popular regional site for boating, swimming, picnicking, fishing and birdwatching. Home to multiple parks and recreation facilities, both private and county-managed, the reservoir is situated 12 miles west of Eugene. The focus of this profile is on sailing activities of the Eugene Yacht Club which describes its venue as "a beautiful place to spend time on the water with family and friends and a great place to enjoy what you love with others who feel the same way."[39] Of sailing comparables, this is likely the most similar lake-oriented venue in the region to Vancouver Lake.

Facility Features. When full, the Fern Ridge reservoir covers more than 9,000 acres and is managed as a flood control project by the U.S. Army Corps of Engineers. The reservoir dam was initially completed in 1941; repairs were made in 2005 to improve internal drainage and rebuild the embankment dam. Maximum reservoir depth is 33 feet, with an average of 11 feet during summer months.

While sharing the lake with power boats, paddleboards, canoes, and rowing, the reservoir's size, reliable winds, and uncrowded waters have made it one of the top sailboat racing venues regionally. Yacht club facilities situated on seven acres include:

- Convenient moorage facilities.
- Overnight camping with restroom, shower and laundry facilities.
- A well-maintained children's play area and sheltered swim area.
- A clubhouse and kitchen where members can enjoy club events or host their own.
- A small fleet of club boats as well as two kayaks and two paddleboards that members can check out for personal use.

The club also runs a week-long Sail School for young and beginning sailors – with follow-up weekly practice sessions.

Organization. The Eugene Yacht Club describes itself as "run by its members for its members." To keep dues low, members contribute an annual number of "work party" hours with work party functions (or are billed for each unfished hour). Members also are encouraged to attend monthly potlucks and social events throughout the year.

Utilization. While detailed information on utilization is not available for users of the Yacht Club, it is noted that annual park usage historically has been estimated at 1.5 million visitors as far back as 1976. More recently, as of 2005-06 total estimated economic impact of the reservoir lake was estimated at $13.6 million of tourism spending per year.[40]

Corpus Christi, Texas (Corpus Christi Yacht Club)

While hosting a range of national and world competitions over the years, Corpus Christi has recently received broader recognition as a competitive regatta location with hosting of the 2018 Youth Sailing World Championships.[41] This event is noted as being the first youth sailing world championship to be accompanied by a featured sustainability initiative.

Facility Features. A major reason for selection of Corpus Christi is an enclosed bay on the Gulf of Mexico described as "large enough, that allows to run large regattas when we would like to." The bay is also noted as offering a consistent sea breeze, being free of obstacles with quick access to the docks and convenience to the race course for sailors.

The venue for the week-long event encompasses three distinct areas – all within about a ¾ mile radius – the Emerald Beach Hotel serving as main regatta headquarters, Water's Edge Park for boat launches and food service for competitors, and the yacht club where all race committee, coach and support boats are docked.

Organization. The primary local club and key figure in securing the world championships has been the Corpus Christi Yacht Club – based on a bid initially submitted in 2014. The club mobilized a team of 85 people and 17 boats to make the event happen, including "gathering up all the equipment and all the necessary supplies to put together on the water."

Other participating organizations include the Sailors for the Sea Clean Regatta practices for regatta planning together with a local/regional Green Team. Presenting sponsor was H-E-B, a supermarket chain based in San Antonio, Texas.

Utilization. The youth championship event involved 382 sailors, age 16-19, from 66 countries, in 110 races and using four race courses over a week's time. Competitors were accompanied by 110 team leaders and coaches. An estimated 267 volunteers were involved in on-land regatta activities with another 119 conducing races on the water – with 92% local to Corpus Christi.

Economic Impact. Based on analysis by the Corpus Christi Convention and Visitors Bureau, the week-long championship was projected to add about $1 million to the local economy. Other estimates placed the impact at closer to $2 million, including $500,000 raised locally.[42]

While economic impact was a consideration in Corpus Christi's hosting of the youth championship, an even greater objective proved to be the event's path-breaking sustainability strategy and post-event Sustainability Report. Initiatives centered on five key sustainability topics: environmental impact, behavioral habits, education programs, gender/nationality representation, and legacy programs.

SailGP (5 Host Cities - 2019)

While focused to date on larger cities than Vancouver, SailGP illustrates the economic impact that sailing can have on global as well as local economies. Funded by Oracle founder Larry Ellison, SailGP in 2019 ran its first event in five cities world-wide, reaching a global audience estimated at up to 1.8 billion. Courses are tight with full race viewing from one location.

Facility Features. SailGP is an international sailing competition using high performance F50 foiling, minimal draft catamarans – capable of speeds up to 50+ knots. Each event involves three days of racing, with three fleet races. The first venue in its inaugural year was Sydney (Australia), followed by events in San Francisco, New York, Cowles (England), and then Marseille (France) as the Season 1 Grand Finale with sailing's largest monetary prize of $1 million.[43]

Organization. SailGP is privately funded. Teams and the F50 boats are owned by the competition, but intended to become separately privately owned. The circuit has been funded for 5 years with a goal of then becoming financially self-sustaining.

Utilization. The aim of SailGP has been to establish a commercially viable global race series with a large audience – leading to use of fast foiling caterermans in highly recognizable and spectacular venues. The inaugural season attracted 133,000 spectators across the five host cities – with peak attendance of 40,000 in New York.

A key objective of the organizers has been to attract a younger generation and broaden participation in the sport – together with demonstrating exemplary sustainability leadership. Three program pathways are also offered – attracting over 3,000 participants in programs about learning to sail, careers, and racing. A future goal is to expand to 10 events per year.

Economic Impact. SailGP retained the accounting firm Deloitte to estimate the economic impact of the Season 1 series. The total tally is estimated at a global impact of $115 million (U.S.) – averaging $23 million per event and topped by Marseille at $29 million. The SailGP events also attracted a cumulative global broadcast audience of 247 million.

Other Sailing & Marina Examples

The following added examples are provided for other sailing and marina related facilities – for which economic impact information is available.

Other West Coast Sailing Venues of Note:

- **Portland, Oregon** – is served by the Willamette Sailing Club, located just south of downtown Portland and described as "the center for small boat sailing in Portland since 1961."[44] The club hosts a year-round schedule of racing, cruising, learn to sail programs and summer youth camps – also river-related social and educational events open to the public. The club serves as headquarters for youth, high school and college sailing teams – involving more than 20-area schools/colleges. Weekend regattas attract up to about 200 sailors region-wide. While a larger club than Vancouver, activities are more constrained by use of a river, yielding more limited potential than at Vancouver Lake. The club also participates in sailing events at Vancouver Lake.
- **San Diego, California** – is home to the Mission Bay Yacht Club formed in 1927, with early sailing focused on flat-bottomed sailboats to maneuver in shallow bay waters – with the inner bay having depths of about 6 feet. The club has a strong tradition of Corinthian (amateur) sailboat racing. the facility's location also has made it a "favorite venue for national and world championship sailing regattas."[45]
- **San Francisco Bay, California** – is served by a number of sailing organizations including the Richmond Yacht Club formed in 1932 to promote affordable sailing.[46] Club members actively race a wide range of boats including monohulls, multihulls, dinghies and skiffs. Excellent harbor facilities including a clubhouse have made it possible for this club to host both small and big boat regattas – including world class championships as well as regattas for bay area racers, junior and youth boaters, and club members. The club offers a cruising service and welcomes cruise-ins – also a youth-oriented learn-to-sail program.

Marina Economic Impact Resource:

- **Association of Marina Industries (AMI)** – released its first ever *Marina Impact Study* in May 2018.[47] The study estimates that 11,500 U.S. marina businesses across the U.S. had an $18 billion total economic impact (with $5 billion in direct spending) and supported an estimated 105,000 full or part-time jobs. In effect, the *average* marina accounts for more than $400,000 of direct spending per year with a total economic multiplier effect (including direct, indirect and induced spending) of just over $1.5 million per year. For purposes of the study, the industry has been defined as including boating clubs with marinas, marinas, sailing clubs with marinas, yacht basins, and yacht clubs with marinas. With 2.3% of the nation's population, Washington state accounts for about 2.0% of the economic output of this industry sector nationwide.

ENDNOTES

[1] Information for this economic impact analysis has been obtained from sources generally deemed to be reliable. However, information provided by third party sources is not guaranteed and is subject to change without notice. Observations and findings made with this report are those of E. D. Hovee. They should not be construed as representing the opinion of other parties prior to express approval, whether in whole or in part. All information is current as of early 2020.

[2] Lake photo source is noted by the photo as: http://www.shootthesun.com/weblog

[3] Source is page 3 of the web site link: https://pubs.usgs.gov/sir/2014/5201/pdf/sir2014-5201.pdf. Deepest depths of the lake can occur during spring freshets; the lake is shallowest in late summer through the winter.

[4] Information on current lake and shoreline public ownership is as of a November 2008 report titled *Technical Foundation for Future Management of Vancouver Lake,* per the web site: http://www.vancouverlakepartnership.org/PartnershipTechnicalFoundation121208.pdf
There have been and potentially remain unresolved questions regarding the status of "unowned" tidelands and responsibilities between DNR and the Port that are beyond the scope of this report to fully address.

[5] Port of Vancouver, *Vancouver Lake Reclamation,* April 1976.

[6] From the *Final Environmental Impact Statement for Vancouver Lake Reclamation Study – Port of Vancouver, Clark County Washington,* prepared by the U.S. Environmental Protection Agency (Region X), June 13, 1978. It is noted that slowed turnover has existed in large part due to human-created changes to the Columbia River and lake including river dams, population growth and development affecting water table levels.

[7] Much of the information for this review is from the Port of Vancouver web site as of February 2020: https://portvanusa.com/environment/port-clears-flushing-channel-recycles-material/

[8] Source is Richard Gorini, from a compilation report titled *Management of Bottom Sediments Containing Toxic Substances of the U.S.,* presented November 3-5, 1987.

[9] One suggested solution to inadequate flushing would be to open the gates to allow reverse flushing, although some studies indicate that this may mean that the good water that goes in would flow back out again. Safety concerns in the area of the opening are also noted, although these could be addressed as with trash racks and by appropriate fencing. An example cited of reverse flushing is Mission Bay in San Diego. The bay is open to the ocean through an 800' wide channel and the tide comes in and out twice a day keeping it cleaned out.

[10] *An Assessment of Economic Benefits of 28 Projects in the Section 314 Clean Lakes Program* was issued in September 1980 by the U.S. Environmental Protection Agency, Office of Water Regulations and Standards Criteria and Standards Division.

[11] Per T. W. Kienlen, "Waterway cleanup: Columbia River diversion will flush polluted lake," *The Christian Science Monitor,* August 13, 1981.

[12] Subsequent engineering reports by Dames and Moore have suggested keeping the tide gates open, a potential action not implemented to date.

[13] Members of the Portland-Vancouver Lake Rowing Association (PVRA) include Lake Oswego Community Rowing, Lewis and Clark College, Oregon Rowing Unlimited, Pacific University, Portland Boat Club, Portland State University Crew, Rose City Rowing Club, Station L Rowing Club, University of Portland, Vancouver Lake Crew, and Willamette Rowing Club. Source is www.pvra.northwest.org.

[14] Per web site www.vlsc.org.

[15] During the course of this economic development research assignment, FoVL initiated discussions with the area's tourism promotion organization – Visit Vancouver USA – to collaborate by including lake recreation as part of Visit Vancouver's Sports Tourism Strategic Plan. Part of the organization's research involves application of a proprietary nationally recognized economic impact calculator to varied high impact sports destinations and facilities. FoVL and Visit Vancouver agreed to apply the economic calculator to estimate rowing and sailing impacts in a manner consistent with the approach being taken to other sports facility opportunities. Subsequent to launch of surveys described by Appendix B, Visit Vancouver staff worked with representatives of both the rowing and sailing organizations to compile data in a format usable with the impact calculator model. That work was not completed due to the COVID-19 pandemic and associated furlough of organization staff, but conceivably could be re-initiated by mutual agreement of the parties in the future.

[16] Economic impact multipliers are for Clark County from the nationally recognized IMPLAN model, 2016.

[17] On behalf of the Washington State Recreation and Conservation Office, Eastern Washington University prepared a *State of Washington 2017 Assessment of Outdoor Recreation Demand Report,* July 2017.

[18] Information for U.S. Sailing is available at the web site: https://www.ussailing.org/

[19] From U.S. Sailing, *Sailing Market Demographics,* as of 2010 with 42,000 members across 1,500 organizations.

[20] An example of a private initiative for creating highly valued lands, attracting high tech and research companies and resolving water quality and bio-diversity issues within Vancouver Lake has been advanced with strategic planning led by Alan Stewart, Jeff Finley and Duane Ehleringer, dated April 18, 2018.

[21] While increasing flow through the flushing channel and dredging have received considerable attention as means to improve water quality and increase year-round depth of Vancouver Lake, another potential option to consider could be construction of a flood control structure on Lake River at Felida on the north side of Vancouver Lake. Pertinent documentation includes a 2014 study of *Water and Nutrient Budgets for Vancouver Lake, Vancouver, Washington, October 2010 – October 2012,* prepared in cooperation with the Vancouver Lake Parnership and Clark County Services Division. Web site link is:
https://vancouverlake.org/?smd_process_download=1&download_id=66
Supplemental data regarding restoring floodplain groundwater survace and corresponding lake levels is also available from an article titled: Peterson, C.D., et al., "Late Holocene chronology and geomorphic development of fluvial–tidal floodplains in the upper reaches of the lower Columbia River ...," Geomorphology (2013): http://dx.doi.org/10.1016/j.geomorph.2013.07.033

[22] Twenty-five survey responses were submitted, including multiple submittals from three clubs. In these cases, results have been combined to provide one consolidated survey response for each club.

[23] With the exception of total spending estimates, unweighted averages are applied, as one or two large events may unduly skew averages – especially on a relatively small sample.

[24] Information for Lake Natoma's aquatic center is from the web site: https://www.sacstateaquaticcenter.com/
Photo is per the website: http://irarowing.com/championship-2019/

[25] Information for the Oak Ridge Rowing Course is available from: http://exploreoakridge.com/rowing/ (photo of SIRA regatta) and https://www.tnvacation.com/local/oak-ridge-oak-ridge-rowing-course

[26] The Melton Lake Rowing Venue at Oak Ridge also includes the following for championship level regattas: referee/starter tower, referee/aligner platform, adjustable start docks in each lane, larger marker at start-finish and 500 meter points along the race course, and a three-story referee tower. Per http://www.orra.org/

[27] Economic impact estimates for rowing are from the City of Oak Ridge, per: https://www.oakridgetn.gov/

[28] Data for Sarasota's rowing course (including course map) is per web site: https://nathanbendersonpark.org/

[29] Peak activity at Sarasota's Nathan Benderson Park in 2017 was attributable to the 2017 World Rowing Championships – an event that alone contributed approximately $22.6 million. Total economic impact in 2018 (a more typical year) was $29.4 million – based on 48 events attended by 120,645 people. Another $3.2 million in additional economic impact for 2018 is attributed to 50 training teams, camps and visits over 1,134 days with 1,653 participants at the park. Per Laura Finaldi, "Parks economic impact falls $19 million from 2017 pinnacle," *The Palm Beach Post,* December 26, 2018.

[30] Ty Aderhold and Theresa C. Hebert, "The Economics of the Head of the Charles Regatta," *The Harvard Crnimson,* October 18, 2013.

[31] Emily Bregel, "Thousands flood to rowing regatta, *Chattanooga Times Free Press,* November 6, 2010.

[32] Information for the *Head of the Hooch Event* can be found at: http://headofthehooch.org/

[33] From a *Funding Sponsorship Opportunities* rowing venue prospectus of 2012 for Dillon State Park in Ohio, as referenced by the web site: https://www.regattacentral.com/

[34] Information for the Princeton NJ rowing venue is from the web site: https://www.rowpnra.org/

[35] From the article "Chris Chase rowing regatta director reflects on 100+ regattas," *Troy Record,* April 24, 2015.

[36] Information on the Long Beach Marine Stadium including links to other resources can be found at: https://www.lasports.org/long-beach-marine-stadium

[37] A report titled *The Economic Impact of Boater Visitor Spending in Lake Havasu City, Arizona* was prepared by Syneva Economics for the Lake Havasu City Partnership for Economic Development, July 20, 20116.

[38] Information for the San Diego Crew Classic can be found at the web site: https://www.crewclassic.org/

[39] Information and photo for the Eugene Yacht Club is from the website: https://www.eugeneyachtclub.org/

[40] Fern Ridge visitor data is the U.S. Army Corps of Engineers, *An Environmental Impact Statement on Operations and Maintenance of the Willamette Reservoir System,* May 1979. More recent spending data is per: https://web.archive.org/web/20060612203216/http://www.nwp.usace.army.mil/issues/fernridge/home.asp

[41] Information regarding Corpus Christi is from multiple sources, as with the local tourism organization (including photo) www.CorpusChristi.com, and local TV reporting: https://kristv.com/news/2018/07/14/city-to-receive-economic-boost-global-attention-from-sailing-championships/. Also noted is the Corpus Christi Yacht Club site including the post-event Sustainability Report, found at: http://ccyc.com/wp-content/uploads/2018/10/YSWC-Sustainability-Report-2018-email.pdf

[42] Len Hayward, "Here's how Corpus Christi was able to land one of sailing's largest events." *Corpus Christi Caller Times*, July 15, 2018.

[43] Information for the SailGP is from Wikipedia and economic impact (with screen shot) from web site: https://www.sailingscuttlebutt.com/2019/10/10/sailgp-reveals-economic-impact/

[44] Information for the Willamette Yacht Club is from: https://willamettesailingclub.com/

[45] Information for San Diego's Mission Bay Yacht Club is from: https://mbyc.org/

[46] Richmond Yacht Club information is per: https://www.richmondyc.org/

[47] The Association of Marina Industries commissioned the *U.S. Marina Economic Impact Study,* conducted by the University of Florida and the Virginia Institute of Marine Sciences, released May 2018.