October 29, 2019

Via Email vicki.walker@dsl.state.or.us & Certified Mail, Return Receipt Requested
Vicki Walker, Director
Oregon Division of State Lands
775 Summer Street, NE Suite 100
Salem, Oregon 97301-1279

Re: OAR 141-088-0004 Request for Order on Willamette River Wake Surfing Boats

Dear Director Walker:

Willamette Riverkeeper submits herewith an OAR 141-088-0004 request for an order from the Department of State Lands to immediately limit the use of large wake surfing boats in excess of 3,500 pounds on the Willamette River.

As detailed in the attached request, scientific materials, and statements, the public has grave concerns over the risks wake surfing boats pose to human lives, property, natural resources, and the environment. DSL is uniquely positioned to provide the public relief – and protection – that other agencies have failed to address. We ask for swift action from DSL on this issue so that human lives may not be needlessly harmed on the Willamette River.

A hard copy of the request and supporting materials will follow via U.S. Mail. Thank you for your Department’s assistance on this matter. Please contact us with any questions.

Sincerely,

s/ Travis Williams
Travis Williams
Executive Director
Willamette Riverkeeper
travis@willametteriverkeeper.org

s/ Elisabeth Holmes
Elisabeth Holmes
Staff Attorney
Willamette Riverkeeper
eli@willametteriverkeeper.org
Tel. (541) 870-7722

cc: Oregon Department of Justice
Oregon State Marine Board
## EXHIBITS

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OAR 141-088-0004 PETITION REQUEST FOR
WAKE SURFING BOATING ACCOUNTABILITY AND RESPONSIBILITY
SEEKING A WAKE SURFING BOATING CLOSURE ORDER ON THE
WILLAMETTE RIVER

I. Introduction and Relief Sought

Oregon Department of State Lands (DSL) regulations OAR 141-088-0004(2) permit that “[a]ny person may request that the Department impose restrictions on public recreational use of state-owned land, or close state-owned land managed by the Department to public recreational use. A request must be in writing and must clearly state the reasons such a restriction or closure is necessary.” This is an OAR 141-088-0004 petition request (hereinafter “Petition”) made by Willamette Riverkeeper, its 7,000 members and supporters (the “Petitioner”) for DSL to immediately impose a closure order restricting the use of wake surfing boats in excess of 3,500 pounds in the Willamette River. As described herein and in the citizen statements and supporting materials provided and incorporated herein by reference, DSL action limiting wake surfing boats is necessary due to the large, powerful boats repeatedly and unacceptably posing risks to human life, health and safety; loss and damage to real property; irreparable loss and damage to natural resources and the environment. See OAR 141-088-0004(4)(a)-(d) (emergencies mean human created or natural event or circumstance that causes or threatens human life, health or safety; loss of, or damage to property; loss of, or damage to natural, historical, cultural or archeological resources; or damage to

Willamette Riverkeeper et al.,
Willamette River Petition for Wake Surfing Accountability and Responsibility
the environment). Due to the risks to human life, Petitioner respectfully requests an order from DSL within sixty (60) days, and certainly before the Spring 2020 wake surfing season begins.

The Petitioner, its members and supporters, greatly appreciate water sports and water recreation opportunities and understand that river wake surfing is fun and athletically challenging, but big boats designed primarily for ocean and lake use pose unacceptably dangerous situations for human health, property, natural resources, and the environment, and unreasonably infringe on the rights of all river users. This Petition, scientific materials, and 30 individual statements submitted herewith document only some of the numerous examples of near-misses with catastrophic injuries to adults and children, destruction of riverbanks which play a critical role in the invertebrate-aquatic species food chain, increases in sedimentation and turbidity from unnaturally strong wave activity, and substantial infringements on recreational and aesthetic enjoyment of the river.¹

Wake surfing boats are now being designed and engineered to generate bigger and more powerful waves with ballasted weights reaching more than 10,000 pounds, and these newer boats promise a future of even higher risks to river users, property, and the ecosystem. The ability of these large boats to create artificial waves can be magnified by weight, ballast, other fixtures or features to enhance wave-making capabilities, and by the number of people in a boat. With the increasing popularity of the sport of wake surfing, the combination of wake boats’ speed, wave direction and energy, and congested surfing and non-motorized recreation areas in narrow segments of the Willamette River mean it is only matter of time before more irreparable harm, and tragic injury, occurs. Public awareness of the dangers is growing,² but state regulation to protect its citizens is not.

¹ Only some examples from the statements are referenced. The packet of each person’s story is submitted in Exhibit 9.
For years, Willamette Riverkeeper, its members and supporters have attempted to curb the human health and safety, real property, natural resource, and environmental risks wake surfing boats on the Willamette River pose to all river users and to the river’s ecosystem. See Exhibit (“Ex.”) 9a (Travis Williams, Willamette Riverkeeper (“WRK”) Executive Director). Interested groups and individuals have tried policy, regulatory, legislative, advocacy, and education approaches. They have submitted statements, photographs, videos, hearing testimony, letters, and emails to the Oregon State Marine Board and the Department of Environmental Quality Yet, Oregon has failed to provide the basic, necessary protections required to safeguard human life and property, and the wildlife and aquatic life that depend on the Willamette River. In the interest of current and future generations, it is necessary for DSL to act immediately to close the Willamette River to wake surfing boats over 3,500 pounds.

II. Willamette Riverkeeper, Its Members, and Supporters

Willamette Riverkeeper is a not-for-profit 501(c)(3) organization. Willamette Riverkeeper was founded in 1996 and focuses on protecting and restoring the resources of the Willamette River basin in Oregon. Willamette Riverkeeper works on programs and projects ranging from Clean Water Act compliance and river education, to Superfund cleanup and restoring habitat. For decades, Willamette Riverkeeper has been a strong advocate for public access to the river. Willamette Riverkeeper organizes boating trips, boating safety clinics, nature education, camping trips, and clean-up events to introduce and enhance the public’s ability to engage with the river. Willamette Riverkeeper has thousands of members in Oregon and across the Pacific Northwest. Many of Willamette Riverkeeper’s supporters have written letters in support of this Petition, which are submitted herewith. Willamette Riverkeeper submits this Petition, statements from scientists specializing in aquatic invertebrates, aquatic environments, and maritime hydrodynamics, and statements from individuals in the Willamette River community. These community supporters include individuals
from the Portland Boathouse (over 1,000 members and includes five other non-profit organizations
Rose City Rowing Club, Station L Rowing Club, Portland State Crew Team, Wasabi Paddling Club);
the Calm Waters Coalition; Willamette Greenway Alliance members; floating home owners; the
Oregon River Safety & Preservation Alliance; and Willamette River residents and recreationalists.

III. Legal Framework

DSL’s authority requires the agency to review any OAR 141-088-0004(4) request. DSL’s
authority in issuing OAR 141-088-0004(2) restrictions applies to “state-owned land”, which is “land
owned or managed by the Department or its agents and includes Trust and Non-Trust land.” OAR
141-088-0002(12). All of the lands at issue in this Petition, including but not limited to submerged
and submersible lands, are state-owned lands. This includes the Willamette River riverbed and
riverbanks. DSL’s review of the Petition must consider seven factors:

OAR 141-088-0004
(4) Restrictions or closures by the State Land Board or the Director will be:
(a) Based on a determination that the action is necessary to:
   (A) Protect human life, health or safety;
   (B) Prevent loss of, or damage to property;
   (C) Prevent loss of, or damage to natural, historical or archaeological resources;
   (D) Prevent damage to the environment;
   (E) Facilitate or protect a removal or remedial action undertaken by or pursuant to
       an order issued by the Oregon Department of Environmental Quality (DEQ) or
       the United States Environmental Protection Agency (EPA);
   (F) Fulfill an objective of an area management plan developed by the Department; or
   (G) Meet other land management objectives or terms of any use authorization
       granted by the Department.

This Petition focuses primarily on (A) through (D) above.

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3 Oregon State Marine Board (OSMB) rules, proposed rules, or current matters under
consideration, or pending legislation in no way prohibit DSL from making the determination
requested herein. OSMB’s authority is limited to promoting safety for persons and property related
to the use, operation, and equipment of boats and to promote uniformity of laws relating thereto.
ORS 830.100. Thus OSMB did not evaluate the DSL’s OAR 141-088-0004(4) criteria, nor does
OSMB have the power to review impacts to lands subject to DSL’s authority. Nor does HB 2351
address all of the human safety, property, and natural resource and environmental concerns raised in
this Petition.
IV. Support for Closing the Willamette River to Wake Surfing Boats

The Willamette River has numerous recreational opportunities and the river basin provides a home and migration stop for diverse species. Boating, fishing, bird-watching, swimming, hiking, biking, hunting, camping, and plant and wildlife observing are just some of the common activities Oregonians and visitors enjoy on the Willamette River. The river has approximately 10 state parks, 3 public ferries, more than 170 Willamette Greenway parcels, city and county parks, Department of State Lands parcels, and boat ramps. Residents of areas like the houseboats at the Portland Rowing Club enjoy the “calm and safe” characteristics of the river on mornings and evenings throughout the year. Ex. 9d (Conour). In recent years since the advent of wake surf boats or big wake enhancing boats, the quietness of the river is destroyed on summer days. See, e.g., Ex. 9d, 9v (Conour, Nerenberg); Ex. 9l (Heibel) (excessive noise); Ex. 9m (Johnson) (wake surfing boats out from 6am to 10pm); Ex. 9w (Peppler). The increase in boat size and the number of people wake surfing is and will continue to cause the problems discussed herein. Ex. 9c, 9r, 9x (Collins, Meyer, Peters). DSL action is necessary to safeguard human life, property, natural resources, and the environment.

a. Protect Human Life, Health, and Safety

Unfortunately, Petitioners believe that the question of whether wake surfing boats will cause grievous harm or even death to another person on the Willamette River is not a matter of “if”, but “when.” Wake surfing boats have caused non-motorized boats to swamp and capsize, forcing racers to swim for shore. Ex. 9b (Chartier), 9p (Mendel), 9bb (Thurber) (noting 7+ non-motorized boats capsized, 50+ boats swamped, 2 rowing shells broken in half, 100 rowers and paddlers thrown from their boats into the water in different incidents). Many boaters who experienced this fear on the river because of prior wake boat-induced capsize events still cannot enjoy of the river. See, e.g., Ex. 9t (Morris); Ex. 9h (Grieve) (“To be very blunt, we are afraid for our lives when we are out on the river and we encounter waves from these boats.”). Not only are paddlers at risk, but as
demonstrated by the statements submitted with this Petition, numerous boathouse crew, and boating club coaches and instructors, have great concern for the exposure their teams face every day on the water in wake surfing season.

Non-motorized boats on the Willamette River have always had to contend with waves from motorized boats and adverse weather conditions. The power of wake surfing boats, however, is extreme and excessive, causes strong waves to arrive perpendicular to shore, and causes non-motorized boats to become swamped and capsize. The 2018 “Wake Wave Study” conducted on the Willamette River found a typical wake boat’s wave energy was at least 2 times, and up to 10 times, stronger than a typical small motorboat. See, e.g. Ex. 3, 3a (Gregor Macfarlane, Associate Professor of Maritime Hydrodynamics and 2018 Willamette River Wake Study). The Oregon State Marine Board’s approach to the issue considers speed, but does not consider boat loading, which is a key criteria for evaluating and assessing wave energy. See, e.g., Id.; see also Ex. 9j (Halle). Anecdotally, and as demonstrated in the statements submitted, long-time river users report one wake surfing boat's waves having multiple times more energy and more than twice the size of waves created by other motorized craft. See, e.g., Ex. 9e (Criscione Genzer (photographs of large waves being surfed on the river)); Ex. 9bb (Thurber); Ex. 9c (Farrell) (witnessing waves over 4 feet high); Ex. 9n (Kavlock) (calling waves “violent”); Ex. 9m (Johnson) (“like a hurricane on the Willamette.”); Ex. 9w (Peppler) (“churning” waters and “make the dock pitch so violently that its hazardous to be standing when the wakes hit.”); Ex. 9i (Hall) (boats operate at “plowing speeds to maximize wakes.”). When there are multiple wake surfing boats in a single area, such as Newberg Pool or the Hawthorne Bowl, plus jet skis, the “water is transformed into a boiling kettle of turbulence…” Ex. 9bb (Thurber). Wake boat manufacturers say that their heavier boats “bring[] the ocean to the river.” Ex. 9s (Morgan); see Ex. 9a (Williams, WRK Executive Director). Indeed, while they might do so, such boats are inappropriate on the Willamette River.
On multiple occasions, wake surfing boat have caused dragon boats racers to stop practicing and just ride out the waves, thus interfering with their non-motorized recreational and aesthetic pursuits. Ex. 9b, 9p, 9t (Chartier, Mendel, Morris). During summer sessions, dragon boat paddlers have to take breaks to re-position and balance themselves to stay safe as large wake boat waves slam into their boats. Ex. 9u (Nelson). On one occasion, a Rip City Paddlers’ boat was so swamped by two wake boats that it sank below the surface, throwing 22 people into the water, including people who cannot swim and were scared by the experience. Ex. 9t (Morris), Ex. 9q (Mendez) (describing otherwise “confident” paddlers having a “terrifying” and “traumatic” experience); Ex. 9u (Nelson) (we “spent the rest of the season on edge every time a boat shared the river with us.”) During that event, dragon boat racers lost wallets, keys, phones, shoes and personal items. Ex. 9t (Morris). It took dragon boat racers 15-20 minutes to bail out the boat before they could swim it back to the dock. Id.

Other small craft boaters have to come to a complete halt when a wake surfing boat is in the area “or risk sending my passengers and my boat flying into the air.” Ex. 9k (Harris). Mr. Heibel designed and built a wooden flat-bottomed boat specifically for use on the Willamette River so it could plane easily and create no wake, but he has had significant trouble driving his boat through wake boats’ wakes and has described it as “really scary.” Ex. 9l (Heibel). When fishing, Mr. Heibel anchors in 90’ water near Waverly Country Club so the boat and bait do not move and scare the fish away, but because of wake surfing boats, he gets knocked around and the waves push him aside instead of being able to stay put as he would otherwise be able to do. Id. A boat hit by wake surfing waves “flies up into the air and slams down on the water.” Ex. 9i (Hall) (describing a boy on her boat nearly falling into the water and luckily only suffering a sore tailbone). Wave surfing boats have caused commercial skiff runners to fall and become injured and bruised. Ex. 9v (Nerenberg). Rowing shells are only about ¼” thick, making them particularly susceptible to large wakes. Ex. 9dd
Single-person skulling boats are extremely small boats that can be easily swamped by motorized boats going fast and coming too close. Id. Wake boats leave non-motorized paddlers little choice of where to be on the river because they cannot avoid the waves or their impacts. Ex. 9a (Williams, WRK Executive Director). Incidents of wake surfing boats make veteran rowers “alarm[ed]…to say the least.” Ex. 9dd (Withycombe).

On another occasion, a nearly 40 year resident of the river was in a 21’ boat on a sunset outing with his wife. See Ex. 9v (Nerenberg). They experienced a harrowing event caused by a wake surfing boat going too fast, 80’ from shore, coming around a bend, and sandwiching Mr. Nerenberg between the wake surf boat and a pontoon boat. Id. Due to the impact of the wake surfing boat’s wave hitting their boat, Mrs. Nerenberg fell, blacked out, lost feeling throughout her body, and Mr. Nerenberg feared she had suffered a spinal injury and needed emergency medical attention. Id. Mr. Nerenberg also witnessed the effects of that event on the pontoon boat, causing a passenger to be thrown to her hands and knees. Id.

Multiple wake surfing boats have intentionally harassed non-motorized boaters and caused dragon boat crews to be in substantial fear of being injured. See Ex. 9p, 9t (Mendel, Morris); Ex. 9a (Williams, WRK Executive Director). Dragon boat racers have documented wake boats failing to obey “no wake” zones, traveling at excessive rates of speed, and traveling “tandem” to create multiple wakes for surfers. Sirens Paddling Club members stated their dragon boat was swamped by speed boats “no less than a dozen times” in the 2019 season. Ex. 9z (Schell). Wake boaters have also engaged in physically threatening and rude behavior towards dragon boat racers and other people on the river. Ex. 9p, 9t (Mendel, Morris). To avoid the large waves hitting the shoreline, non-motorized boaters have been forced out into the middle of the river, where wake boaters then instruct non-motorized boaters to move out of their way. Ex. 9a (Williams, WRK Executive Director). The
middle of the river is the last place a non-motorized paddler wants to be when wake boaters are active, but they have no choice.

The risk of physical injury is not limited to people on the water in non-motorized boats. Due to the wave size, energy, and travel distance, people, pets, and property on structures such as public and private docks, marinas, and houseboats, are at risk of injury. See, e.g., Ex. 9h (Grieve) (We “end up keeping others off the river to avoid being hurt.”); Ex. 9v, 9bb (Nerenberg, Thurber). Many residents no longer allow their family or pets to be on their docks and feel threatened while swimming. See, e.g., Ex. 9h, 9i, 9w (Grieve, Hall, Peppler).

The point of wake surfing boats is to create large, powerful waves. The danger wake surfing boats inherently pose is completely at odds with other craft and uses of the Willamette River. Nonmotorized boaters have successfully shared the river with all types of watercraft for years, “but the increased use of high energy wake surfing is different.” Ex. 9aa (Smith); Ex. 9w (Peppler) (water skiing and tubing involve lighter weight boats and small wakes); Ex. 9s (Morgan) (“Crews, teams, swimmers and float home owners have coexisted successfully for decades with other motor boats, deep draft vessels, tug and towboats, barges, launch vessels and other commercial and cruise vessels in the [] Willamette, and expect to do so going forward.”). The Willamette River is narrow in spots that appear to be favored by wake surfing boats. In the Newberg Pool, for example, the river is less than 600 feet wide, and, as rivers do, it winds and bends. Large and energetic waves in small areas of the river where wave energy cannot dissipate makes the river an increasingly dangerous place. See Ex. 9h, 9j, 9cc (Grieve; Halle, Whittaker). A 2017 study submitted to the Oregon State Marine Board confirmed that at least 400 feet width was required for wave energy to diminish. Ex. 3, 3a (Macfarlane 2018 Willamette Wave Wake study and statement). However, wake boats’ failure to follow no-wake zone restrictions (see, e.g., Ex. 9w (Peppler); Ex. 9m (Johnson) (wake boats less than 100’ from shore); Ex. 9l (Heibel) (wake boat less than 80’ from shore), failure to stay in the middle
of the river, and the small size and congested wake surfing areas makes reduction of wave energy impossible on the Willamette River. Wake surfing boats themselves are dangerous on the Willamette River; and when driven in manners that do not respect no-wake zones, or in congested areas together with non-motorized craft, the risks are unacceptable and DSL action is necessary to protect human life, health, and safety.

b. Prevent Real Property Loss or Damage

Many of the supporters of the Petition own real property on or near the Willamette River, and have lived there for decades. All supporters have documented significant changes in the last few years that they attribute to wake surfing boats, and readily distinguish the nature and degree of property loss or damage due to wake surfing boats from traditional winter damage. See, e.g., Ex. 9i, 9m, 9v (Hall, Johnson, Nerenberg). As documented in their attached statements, longtime residents and Willamette River users describe wake boat waves as “rogue waves that caused our home to rock, sometimes violently” and a “loud bang as connected floating structures strained against their collective restraints.” Ex. 9d (Conour). In floating homes, residents have “had to be careful when we were up stairs that we weren’t knocked off balance onto the floor” (id.), and wake surfing boats passing by cause the “equivalent of major earthquakes” and “knock[] people about their homes.” Ex. 9bb (Thurber). Some floating homes experience structural damage due to high-energy waves from wake surfing such as drywall and wall cracks, loosening of mooring anchors, damage to water lines, outside electrical conduits, breaking sewer, gas, and electric lines. See, e.g., Ex. 9d, 9x, 9bb (Conour, Peters, Thurber). Pictures fall off walls, and floating homes “jerk, shake[], rock[] and clang[].” Ex. 9x (Peters).

Dock and flotation devices are being damaged, dock hoop boards have completely snapped, dock screws have simply broken in half, and wake boat waves roll right up onto the dock. Ex. 9k (Harris) (“[W]e have had more damage to our dock in the past 2 years than we had in the
other 14 years [of ownership] combined.”); Ex. 9m (Johnson) (heavy steel pile rings snapped and bent away under the pressure of the waves); Ex. 9w (Peppler) (pilings snapped, gangway had to be replaced due to erosion); Ex. 9g (Galloni) (extremely heavy steel pile rings snapped). During the wake surfing season, dock users have large waves wash over the docks repeatedly during the entire boating season, making it unsafe for people to be on the dock, and personal property left on residents’ docks gets swept away. Ex. 9h, 9l, 9v (Grieve, Heibel, Nerenberg); Ex. 9x (Peters) (unable to use deck for fear of falling and has been nauseous from wave action movement); Ex. 9w (Peppler) (waves are “so huge, they wash over the dock with enough power to move chairs, tables and small children.”); Ex. 9i (Hall) (thrown from her boat to the dock when strapping down her boat and “The only reason I didn’t fall in and get hit by the lurching boat was a friend spotted me and pulled me to safety.”); Id. (“We cannot have young children or older people on our dock when there are wake boats.”). Wake surfing waves have damaged boats moored along riverfront properties. Ex. 9v (Nerenberg). Some riverfront residents did not even put their boats in boathouses this year for fear of damage. Ex. 9i (Hall).

Wake surfing is imposing material repair costs on property owners, and emotional anguish. See, e.g., Ex. 9bb (Thurber). One floating homeowner spent $5,000 repairing a deck, only to have it damaged by intense wave surfing wake activity a week later, and now requiring more than $25,000 in efforts to fully make the floating home safe and livable from the effects of wake surfing boats. Ex. 9x (Peters). Even the Oregon State Parks and Recreation Department is currently stabilizing its own Champoeg Park Boat Dock with a $155,000 project due to bank erosion. Ex. 9c (Collins). A 20-year resident of the river has suffered more than $20,000 in damage to his property from the large wakes. Ex. 9h (Grieve). A limited selection of property damage examples from the statements submitted with this Petition show damages ranging from $2,000 for gangway repairs, to retaining wall repairs costing between $14,000 and $46,000, and to $37,000 and $47,000 for dock and ramp repairs, and
erosion remediation projects ranging from approximately $4,800 to $15,000. Homeowners have installed additional buoys to demark legal boating zones, which wake boaters ignored, and logs and tiedowns and bumpers to dampen the effects of the waves, to no avail. See, e.g., Ex. 9i, 9j (Hall, Halle). Of course, wake-boarding property owners themselves are not immune from the losses or damage the activity causes (see, e.g., Ex. 9cc (Whittaker) ($8,000 to repair dock damage)), but are also simultaneously concerned with the impacts the congestion, increases in boat weight, cause to the river. Property owners also believe the effects of wake surf boats are causing their property values to decrease. Ex. 9bb (Thurber). The property damages and losses Petition supporters are suffering from wake surf boats supports DSL action under OAR 141-088-0004.

c. Prevent Loss or Damage to Natural Resources, and Prevent Damage to the Environment

The advent of larger boats sucking more water and creating dangerously massive waves means more damage to the Willamette River’s riparian zone, river bottom, riverbanks and shoreline. These boats also mean destruction of the river’s natural structure, which in turn negatively effects insect, aquatic, wildlife, and bird habitat; and thus injures the aesthetic beauty and appreciation supporters of the Petition have for the Willamette River ecosystem and their ability to interact with it. Property damage can be repaired, but wildlife, and embankments, cannot. See, e.g., Ex. 9c (Criscione Genzer). The natural resource and environmental damage has already been happening for years, which why Petitioner and the supporters have assiduously fought to have stronger restrictions on wake surfing boat. Protective action cannot be put off any longer, and this Petition demonstrates why DSL action necessary. See, e.g., Ex. 9c, 9d, 9h (Conour, Collins, Grieve). The lands targeted for protection by this Petition are within DSL’s authority to regulate. OAR 141-088-0002(13) (submerged land), (14) (submersible land), and the Petition seeks DSL action on protecting the natural and environmental resources within its jurisdiction.
The banks of the Willamette River in many areas where wake surfing boats go are soft and fragile, and the riverbed and banks are highly erosive. See, e.g., Ex. 9y (Poor, Civil Engineer, Ph.D. in Water Resources). Sections of the shoreline are characterized as steep/soft-sediment susceptible to erosion. Over and over, property owners have witnessed waves from wake surfing boats washing silt into the river and eroding the shoreline. Residents have documented significant and extreme unnatural riverbank erosion, and undercutting of the banks particularly in the last 3-5 years as wake surfing boat use has increased. See, e.g., Ex. 9f (Farrell) (losing 15 feet of riverbank to erosion in last 5 years); Ex. 9h, 9j (Grieve, Halle); Ex. 9w (Pepper) (photographs and 30 feet of erosion in last 10 years); Ex. 9e (Criscione Genzer) (see photos showing difference between July 6, 2019 and August 26, 2019); Ex. 9i (Hall). The power and size of wake surfing waves means the waves travel farther before their energy and effects can dissipate. See Ex. 9f (Farrell) (describing waves hitting shore in last 5 years and resulting in embankment loss of over 15 feet); Ex. 9h (Grieve). Waves of this excessive size and energy, and that travel in closely-packed “sets” are unnatural to the Willamette River, and the river ecosystem is not equipped to handle the impacts. Ex. 9w (Pepper) (noting when only 2500 pound boats were on the river, erosion was not visible); Ex. 9a (Williams, WRK Executive Director). This erosion is also not natural during the summer months. Ex. 9y (Poor, Civil Engineer, Ph.D. in Water Resources) (“Natural erosion occurs during the winter months with high flows, not during the summer when erosion from boats commonly occurs.”).

Wake surfing boats create great turbidity in the Willamette River, which extends beyond the surfing areas and continues long after the wake surfing boats leave the area. See, e.g., Ex. 9a (Williams, WRK Executive Director) (letter and photographs); Ex. 9e (Criscione Genzer) (letter and photograph documenting turbidity extending 150’ from shore); Ex. 9o (Levenson, Human Access Project (video)); Ex. 9m (Johnson) (turbidity reaches the center of the river). Turbidity is pollution under OAR 340-041-0002(45). Excess turbidity affects recreational use of the river and aquatic life.
in the river. It may even be related to increased algae blooms. See, e.g., Ex. 9i (Hall). Aquatic species' uses of the river and riparian habitat are not adequately protected by measures such as restricting the distance from shore that river surfing activities can occur, and frankly the turbidity already being witnessed in the Willamette River is significant in the nearshore area during wake surf boating season which occurs throughout the year but primarily between April through October. This is also the timeframe when both juvenile and adult Spring Chinook, listed as threatened under the Endangered Species Act, are found in these areas. See, e.g. Ex. 1, 1a (Prof. Emeritus Gregory); Ex. 5 (Schroeder, R.K. et al., “Juvenile life-history diversity and population stability of spring Chinook salmon in the Willamette River basin, Oregon.” Can. J. Fish Aquat. Sci. 73: 921-934 (2015)); Ex. 9a (Williams, WRK Executive Director). Willamette Riverkeeper has previously informed the Oregon State Marine Board and the Oregon Department of Environmental Quality of its turbidity concerns, but neither agency provided a meaningful response that would protect natural resources or the environment. See, e.g., Ex. 4 (Willamette Riverkeeper letter to Oregon DEQ and DEQ response).

Turbidity harms fish and aquatic species’ ability to thrive in their native habitats. Willamette River residents describe clear and transparent conditions early in the morning and being able to see fish, “However, once the wake boats start operating, the river becomes completely muddy due to the waves hitting the shoreline and undercutting the bank and pulling sediment into the river. Sometimes the river is muddy brown out more than 100 feet from this wave action.” Ex. 9c (Collins). Turbidity and sedimentation decrease water quality, can lead to water temperature increases and decreased oxygen content, and can foul, bury, and smother aquatic insect gills. Exhibit 2 (CASM Environmental) (Ph.D. in entomology with specialization in aquatic systems).

As the shoreline is scoured away by wave action from wake surfing boats, the erosion and degradation of the shore, shallowing of the river and disrupt native wildlife and their habitat. See, e.g., Ex. 2 (CASM Environmental) (“Such extreme and rapid erosion causes severe disturbance to
both terrestrial and aquatic habitats, and has immediate impacts on the myriad of aquatic invertebrates that live in and around the river.”); Ex. 9h, 9k, 9v (Grieve, Harris, Nerenberg); Ex. 9m (Johnson) (wildlife habitat and nesting changing due to turbidity, noise, crashing waves); Ex. 9ee (Whittaker) (used to see crawfish and other aquatic life because of waves hitting the shore); Ex. 9a (Williams, WRK Executive Director) (large waves “slam” fish and wildlife around “in a rather intense and violent wall of water that repeats multiple times as the waves hit the shore.”); Ex. 6 (Zajicek, P. et al., “The effects of recreational and commercial navigation on fish assemblages in large rivers.” Science of the Total Environment 646 1304-1314 (2019)); Ex. 7 (Pearson, W.H. et al., “Factors Affecting Stranding of Juvenile Salmonids By Wakes from Ship Passage in the Lower Columbia River.” River Research and Applications, 27: 926-936 (2011)); Ex. 8 (Pearson, W.H. et al., “A Study of Stranding of Juvenile Salmon by Ship Wakes Along the Lower Columbia River Using a Before-and-After Design: Before-Phase Results.” U.S. Army Corps of Engineers (Portland District) Report No. PNNL-15400 (2006)). As one supporter has stated:

“Nature was altered this year - I have seen osprey circling and circling all day until the huge amount of boating ends at the end of the day. We have had vultures nest every year and roost in our river side trees – NONE this year. We watched dear chased away from the banks due to waves crashing where they stood to drink. The beavers that we used to enjoy while kayaking are gone. Rarely saw any fish jump this whole summer. The small fish along the shoreline were no longer even visible due to the turbidity.” Ex. 9g (Galloni).

When wake surf boats create artificial waves, they lift sediment from the river bottom and spread it around a large area. See, e.g., Ex. 9a (Williams, WRK Executive Director) (statement and photographs); Ex. 9e (Criscione Genzer) (photographs). Turbidity and sedimentation from erosion can smother aquatic species, including threatened freshwater mussels.

The Willamette River is home to juvenile salmon, steelhead, trout, and other fish species including sturgeon, threatened freshwater mussels, osprey, blue herons, and bald eagles. The Willamette River’s banks are an integral part of these species’ food chains and the river’s ecosystem.
Ex. 1 (Prof. Emeritus Gregory). Destroying the banks that are home to insects and macroinvertebrates, and the river bottoms, causes irreparable harm to the Willamette River’s natural resources and environment as whole. Aquatic insects such as mayflies, caddisflies, black flies, and stoneflies, along with other invertebrates such as freshwater mussels, are essential to healthy ecological function of the river and are a critically important food source for fish and other wildlife, including our threatened native salmonids. Ex. 1 (Prof. Emeritus Gregory); Ex. 2 (CASM Environmental).

The nearshore habitats of the Willamette River are the “nurseries” for our native fish and are critical for producing food resources and providing essential habitats for aquatic insects, freshwater mussels, early life stages of all native fish, and adult native fish. Ex. 1 (Prof. Emeritus Gregory). These nearshore habitats support the highest level of benthic primary production in the river; this is the base of the Willamette River’s food web. *Id.* Low-level velocity water in these areas is essential to productive communities and aquatic invertebrates. *Id.* The early life stages of almost all native fish species (minnows, suckers, sculpins, lamprey, trout, Chinook salmon, steelhead) in the Willamette River are restricted to the lower velocities in the shallow nearshore habitats. *Id.* (referring to OSU and ODFW research confirming juvenile Chinook salmon in shallow habitats with gradually sloping bottom adjacent to shore); Ex. 9a (Williams, WRK Executive Director). High levels of strong wave activity can increase benthic scour, washing out invertebrates that live in and on the substrate and making them unavailable as food for local wildlife. *Id.* The turbulence and velocity of the wave surfing wake boats scour algae from the surfaces, reducing primary production, and causing silt and sediment suspended by the wakes to coat benthic communities and block light for their photosynthesis. Ex. 1 (Prof. Emeritus Gregory). Increased substrate mobilization can also remove habitat required for shelter or oviposition. Exhibit 2 (CASM Environmental). Increased turbidity and sedimentation have been associated with the decline of sensitive taxa such as mayflies,
stoneflies, and caddisflies and thus decreasing prey for fish. Id.; see Ex. 1 (Prof. Emeritus Gregory). Decreases in winged insects can also impact wildlife in riparian zones such as spiders, bats, birds, and amphibians. Exhibit 2 (CASM Environmental). The Willamette River is also home to large populations of native freshwater mussels, including Western Pearlshell (Margaritifera falcata) and Floaters (Anodonta). Freshwater mussels are one of the most threatened groups of animals globally, in North America, and many native populations have declined throughout the Northwest. Id. These filter-feeding organisms play a huge role in improving water quality and clarity, but they too can be smothered by increased sedimentation and/or scoured out by strong wave activity. Id. During low flow periods, increased sedimentation cannot be easily removed. Ex. 1 (Prof. Emeritus Gregory).

River wake surfing boats also destroy the calm, quiet habitat spots along the river that threatened and endangered species depend on to rest during migration, to feed, and to breed. Wake surfing boats’ activities and excessive noise may interfere with salmon, steelhead, and other species’ ability to return to their spawning grounds, enabling species survival and ability to thrive. DSL action is necessary to prevent further loss or damage to natural resources, and to prevent further damage to the environment. There has been such massive investment during the last 20 years to restore the Willamette River Basin habitat; it is non-sensical to allow wake surfing to take away all the good work that has been done. Ex. 9a (Williams, WRK Executive Director).

V. Conclusion

Wave wake boats have quickly been increasing in size, power, and weight, which means increasing safety risks for other people in the water. In 2019, these boats were 15%-20% heavier than 2017-2018 models; and the 2020 models are expected to be even heavier. River residents and non-motorized boat users are greatly concerned with the increase in size and power of these boats and erosion. See Ex. 9c (Collins); Ex. 9e (Criscione Genzer); Ex. 9h (Grieve); Ex. 9cc (Whittaker) (wake boarder concerned with impacts of larger boats on the river). Without immediate closure of
the Willamette River to wake surfing boats, DSL will not be able to meet its obligations under the law, and serious risks to human life will remain unprotected by other state agencies or laws.

Willamette Riverkeeper, its members and supporters, request that DSL immediately issue a closure order to wake surfing boats in excess of 3,500 pounds on the Willamette River. Unlike half-measures proposed by the Oregon State Marine Board, requests for action declined by the Oregon Department of Environmental Quality, and legislation that does not address this issue in a holistic manner, the Department of State Lands has a unique opportunity, and the authority, to resolve this problem. If DSL issues such a closure order as Petitioners request, DSL will automatically limit the artificial wave size, resulting in greater protection for human life, property, and the river’s natural resources and environment for all Oregonians to enjoy.

Respectfully submitted on behalf of Willamette Riverkeeper, and its Members and Supporters, this 29th day of October, 2019.

s/ Elisabeth Holmes
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Enclosures: Exhibit List and Exhibits

cc: Oregon Department of Justice
Oregon State Marine Board