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From: Darren Saintonge, Environmental Specialist, Hatfield Consultants LLP

To: Andrew Allan, District Environmental Manager, Western Canada District, Peter Kiewit Sons ULC

Subject: Western Painted Turtle Critical Habitat Assessment - 1950 Brigantine Drive, Coquitlam BC

1.0 INTRODUCTION

Peter Kiewit Sons ULC (Kiewit) operates a waterfront property located at 1950 Brigantine Drive in Coquitlam, British Columbia (BC; the Marine Yard). Development and expansion of the Marine Yard is required to meet the demands of the regional projects which it serves. Kiewit is currently in the planning and design phase for the addition of a pile supported trestle, a pile-supported conveyor structure, and a roll-on-roll-off platform, yard expansion by infill, and dredging to remove accumulated sediments (the Project).

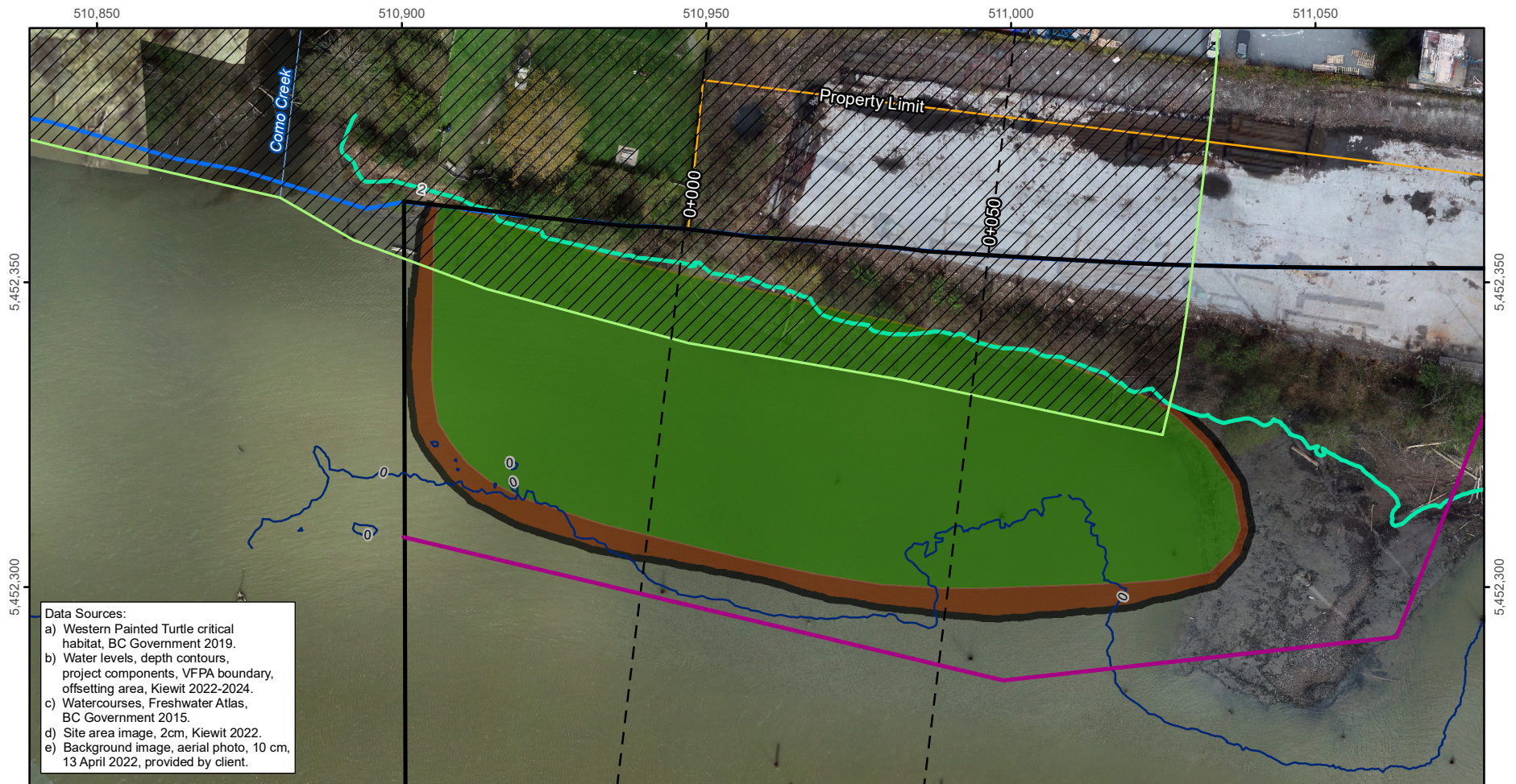
The Marine Yard is split between a 6.8 acre freehold lot owned by Kiewit under the jurisdictional authority of the City of Coquitlam and a 36 acre lot leased from the Vancouver Fraser Port Authority (VFPA) under federal jurisdiction (collectively, the Project Site). The western end of both the freehold lot and the VFPA lease overlap with a critical habitat polygon (Polygon ID 92462) for the western painted turtle (*Chrysemys picta bellii*) Pacific coast population (hereafter referred to as painted turtle; Figure 1). The painted turtle is listed as threatened under Schedule 1 of the federal Species at Risk Act (SARA) and is provincially red-listed by the BC Conservation Data Centre.

Project development and expansion activities will take place outside of the painted turtle critical habitat polygon (Hatfield 2023a). To offset Harmful Alteration, Destruction, and Displacement (HADD) of fish habitat associated with the Project, Kiewit is proposing to create a freshwater tidal marsh habitat in an area that will overlap with the critical habitat polygon and falls within the VFPA managed federal lands (VFPA lease area; Hatfield 2023b). Additionally, the Project proposes to conduct clearing and planting on a riparian bench above the proposed marsh to implement a Riparian Planting Zone (RPZ; Figure 2), which also overlaps with the painted turtle critical habitat polygon. The RPZ will improve riparian function within a landward portion of the VFPA managed federal lands.

To avoid and minimize impacts to painted turtle critical habitat during creation of the tidal marsh habitat and the RPZ, this memo:

- Identifies where painted turtle critical habitat occurs within the VFPA lease area, within the geospatial boundaries of the critical habitat polygon;
- Assesses if the activities will result in critical habitat destruction; and
- Evaluates the Project's need to obtain a SARA permit to destroy critical habitat within the VFPA lease area.

Figure 1 Western painted turtle critical habitat within the Project area.

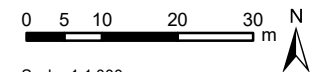
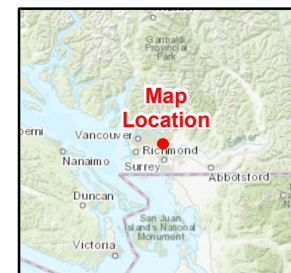


Legend

- Watercourse
- LWL (0 m chart datum)
- VFPA Boundary
- Western Painted turtle terrestrial boundary (2 m chart datum)
- Western Painted Turtle critical habitat
- Transect
- Debris boom
- Waterlot Lease Boundary
- Property Boundary
- Offsetting Area**
 - Marsh
 - Riprap
 - Boulder

Fraser River Barge Facility Permitting

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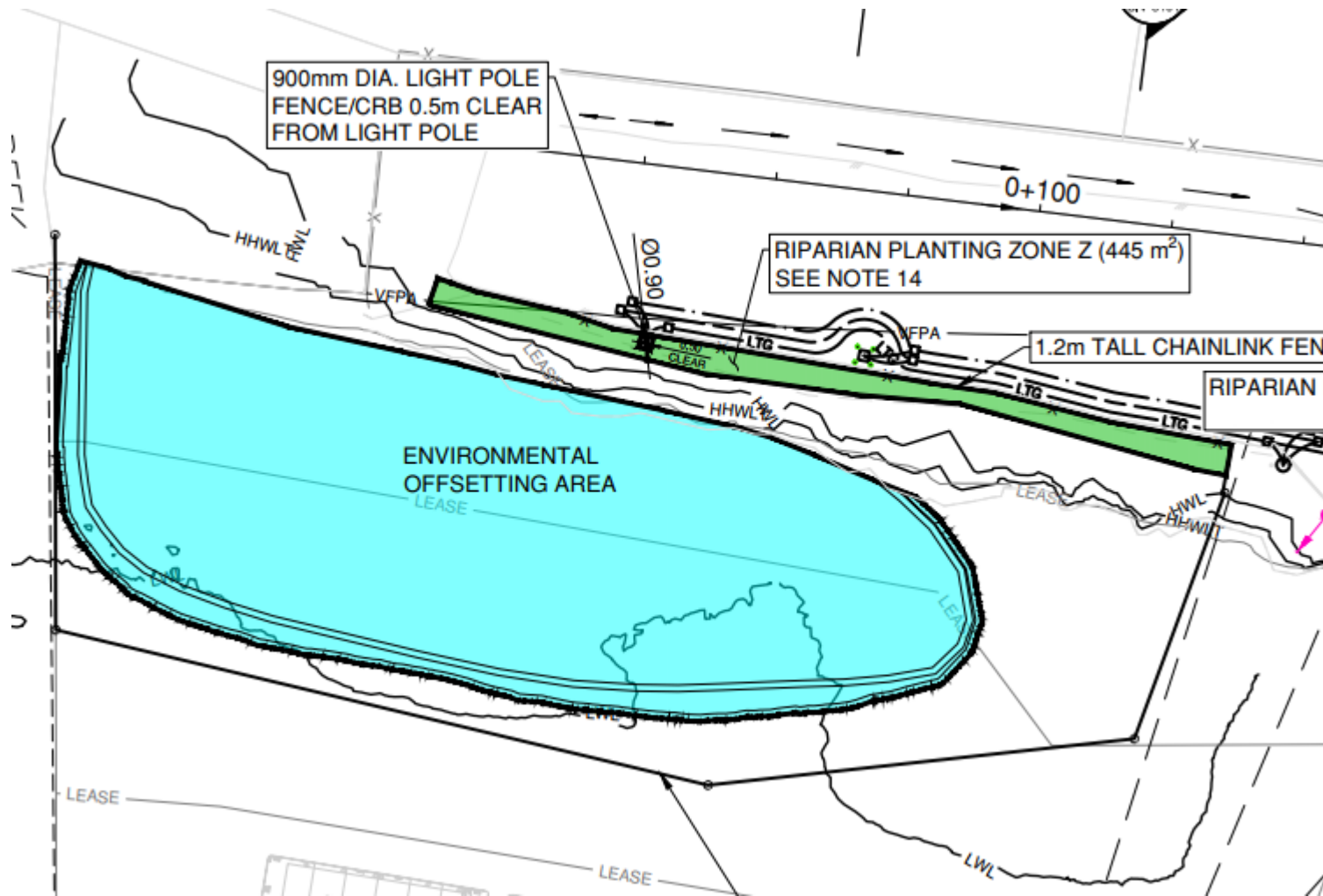


Scale: 1:1,000

Projection: NAD 1983 UTM Zone 10N



Figure 2 Offsetting Area and Riparian Planting Zone Preliminary Design.



The footprint of the Riparian Planting Zone (RPZ) is shown in green, and marsh bench construction footprint shown in blue.

2.0 REGULATORY FRAMEWORK

Critical habitat is the habitat that is necessary for the survival or recovery of a species listed on Schedule 1 of SARA as extirpated, endangered, or threatened. The biophysical attributes of critical habitat are identified in the recovery strategy for the species. The Recovery Strategy for the Western Painted Turtle (*Chrysemys picta bellii*) Pacific Coast population in Canada (the Recovery Strategy) was finalized on July 8, 2021 (ECCC 2021).

Subsection 58(1) of SARA contains prohibitions against destroying any part of critical habitat for at-risk species on federal land, including the VFPA lease area. Critical habitat is considered destroyed if part of the critical habitat is degraded, either permanently or temporarily, such that it would not serve its function when needed by the species. Destruction may result from a single or multiple activities at one point in time or from the cumulative effects of one or more activities over time (GoC 2016).

3.0 CRITICAL HABITAT IDENTIFICATION

The overlapping critical habitat polygon for the painted turtle is part of the Coquitlam population, and includes all of Como Creek, and a 150 m buffer around Como Creek. The western portion of the Marine Yard overlaps with the critical habitat polygon. Overlapping areas include 4,416 m² of the Marine Yard, including 2,501 m² within the VFPA lease area (Figure 1).

Areas within the polygon are only considered critical habitat if they possess features that are necessary for the survival or recovery of a species. For the purposes of this assessment the critical habitat polygon was divided into terrestrial areas (above +2.0 m Chart Datum (CD)), and intertidal areas (at or below +2.0 m CD). Based on Site imagery terrestrial vegetation is limited to areas above +2.0 m CD, as areas above and below this mark provide different life-history functions for painted turtle. Steep slopes, ranging from 30° to 90° across the length of the Marine Yard, limit painted turtle movement between the two areas.

3.1 TERRESTRIAL HABITATS

Within the critical habitat polygon, terrestrial habitats are critical habitat if any of the following biophysical features and attributes are present (ECCC 2021):

- Open terrestrial habitat types (i.e., areas with exposed soil and little to no vegetation such as beaches, shoreline, sandy/loamy riparian edges or banks, natural islands, rocky bluffs, or canopy gaps in forested habitats) where features include any of the following attributes:
 - flat or gently sloping ground (no pooling water); or
 - substrate: sand, gravel, or silt; low organic content
- Additional types of natural terrestrial habitat features (e.g., forest, shrublands, grasslands, fields).

Terrestrial areas on the western end of the VFPA lease area possess these attributes and are critical habitat for painted turtle. These areas consist of intact mature deciduous forest bordered by upland bench riparian habitat (Photos 1 to 4) (Hatfield 2022). Riparian benches have flat, gently sloping ground, meeting the criteria of open terrestrial habitat, while deciduous forest is an additional natural terrestrial habitat feature and is also considered critical habitat.

3.2 AQUATIC HABITATS

Within the critical habitat polygon, aquatic habitats are critical habitat if any of the following biophysical features and attributes are present (ECCC 2021):

- Slow-moving or stagnant freshwater waterbodies (i.e., lakes, ponds, marshes, river channels, roadside or drainage ditches, sluggish streams, or sloughs) where features include any of the following attributes:
 - emergent vegetation, floating vegetation, vegetative mats;
 - bottom substrates: organic material such as decaying vegetation and detritus; partially organic silt or sand; and mud;
 - submerged or emergent logs or large woody debris; rocks; or
 - warm shallow water margins.

As the aquatic habitat is in the Fraser River, the intertidal area is not critical habitat as it is not a slow-moving or stagnant freshwater waterbody. Although the habitat does contain submerged and emergent large woody debris and bottom substrates high in organic content and fine sediment the offsetting location makes it highly unlikely to be used by painted turtle as the Fraser River is a natural barrier to painted turtle movement (ECCC 2021).

3.3 OTHER AREAS

Areas within critical habitat polygons which do not contain attributes listed in Sections 3.1 and 3.2 are not critical habitat. As noted in the Recovery Strategy examples of clearly unsuitable habitat include:

- Existing permanent infrastructure (buildings, extensive spans of artificial surfaces, running surface of major paved roads having high traffic volumes); and
- Portions of terrestrial habitat that are completely isolated by impassable barriers (e.g., non-traversable topography, large fast-flowing rivers, continuous concrete road barriers) where no culvert or underpass exists.

Table 1 Photographs of terrestrial habitats and vegetation observed at the Site on May 19, 2022 (Hatfield 2022).



Photo 1 Terrestrial and intertidal foreshore habitats looking east from the eastern end of the proposed marsh habitat.



Photo 2 Terrestrial and intertidal foreshore habitats looking east from the western end of Project Site.



Photo 3 Terrestrial and intertidal foreshore habitats looking west from the eastern end of the proposed marsh habitat.



Photo 4 Terrestrial and intertidal foreshore habitats looking west towards the mouth of Como Creek from within the proposed marsh habitat.

4.0 IMPACT OF PROJECT ACTIVITIES

Based on activities described in the Offsetting Plan (Hatfield 2023b), and details of the RPZ provided by Kiewit, a permit under Section 73(2) of SARA is required for both the construction of the tidal marsh and RPZ. Although the intent of the activity is to increase habitat function, it is anticipated that natural terrestrial areas considered critical habitat for western painted turtle will be temporarily degraded (i.e., destroyed, as defined in SARA) during marsh bench construction and during works in the RPZ.

Construction activities that will, or have reasonable potential to, result in the destruction of critical habitat as identified in the Recovery Strategy (ECCC 2021) include:

- Alteration of local hydrological characteristics (e.g., draining and filling in wetlands, water diversion, dredging, water management, damming, artificial channelization, and shoreline alteration);

- Development and/or maintenance or modification of existing structures, or installation of other types of barriers to turtle movement (e.g., fencing);
- Activities that cause introduction of non-native plant species, including moving fill that contains propagules of non-native species; and
- Mechanical removal of invasive species or encroaching native vegetation.

As required under Section 73(3) of SARA, permit applicants must demonstrate all of the following (GoC 2016):

- a) all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted;
- b) all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; and
- c) the activity will not jeopardize the survival or recovery of the species.

As all reasonable alternatives to the activity have been explored, the activity is part of habitat improvements that will likely benefit the species, and appropriate mitigations will be employed during construction to avoid impacts, a permit approval is likely.

5.0 CLOSURE

We trust that the above information meets your expectations regarding this scope of work. If you have any questions, please do not hesitate contact Alasdair Lindop at alindop@hatfieldgroup.com.

Sincerely,



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6.0 REFERENCES

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