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Patrick O'Brien
Patrick O'Brien Development LLC
200 Old Farm Road
South Burlington, VT 05403

Subject: Grove Street Wetlands

Dear Patrick,

This is to summarize my findings regarding wetlands at the site of the proposed Grove Street Apartments, and their relevance to the Burlington Comprehensive Development Ordinance. There are five wetlands on or near the proposed site of the Grove Street Apartments – two associated with Centennial Brook and near or three adjacent to the Winooski River.

These wetlands were delineated in August 2014, using methodology found in the 1987 US Army Corps of Engineers Wetland Delineation Manual and 2009 Regional Supplement, as required by the Vermont Wetland Rules, and surveyed/mapped by O'Leary-Burke Civil Associates.

Wetland A is a riparian wetland that has formed in an area where the bank of Centennial Brook has slumped, allowing wetland vegetation such as sensitive fern and glossy buckthorn to become established. The 100-foot buffer zone around this wetland extends into the area around proposed Building F and its parking garage entrance ramp, but calculations indicate that impervious acreage in this buffer zone will be reduced by 0.23 acres (from 0.32 (existing) to 0.09 (proposed).

a. **Water storage for floodwater and stormwater**: Not applicable; this wetland has no capacity to store water.
b. **Erosion and sediment control through binding and stabilizing the soil or shoreline**: Not applicable; this wetland is on unstable ground and as such does not contribute to erosion or sediment control.
c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge**: Although under existing conditions this wetland may receive runoff from industrial activity upslope, it is not of a size or wetland type that might perform this function.
d. **Fisheries habitat**: Not applicable.
e. **Wildlife habitat**: Not applicable; although the wetland lies in a travel corridor along Centennial Brook, the fact that it is a wetland is irrelevant to this function.
f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** Not applicable.

g. **Habitat for rare, threatened or endangered species:** Not applicable.
h. **Education and research in natural sciences:** Not applicable.
i. **Recreation and economic benefits:** Not applicable.
j. **Open space and aesthetics:** Not applicable.

Wetland B is another riparian wetland at the mouth of Centennial Brook, well away from any proposed activity regarding this project.

Wetland C is on the floodplain of the Winooski River, dominated with silver maple and box elder over ostrich fern, sensitive fern, reed canary-grass, and jewelweed. All proposed development lies outside the 100-foot buffer zone of this wetland.

a. **Water storage for floodwater and stormwater**: Although this wetland is in the Winooski River floodplain, it does not significantly contribute to this function because of its size.
b. **Erosion and sediment control through binding and stabilizing the soil or shoreline**: While this wetland is adjacent to the Winooski River, it provides no more erosion or sediment control than "upland" shorelines nearby.
c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge**: Because it is in a depositional area, during flood events this wetland likely intercepts and retains sediments carried by the river.
d. **Fisheries habitat**: This wetland lies well above the normal river level and therefore does not contribute to this function.
e. **Wildlife habitat**: The wetland lies in an area that serves as a wildlife corridor along the river. There is evidence of use by otter and beaver along this part of the river.
f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** Not applicable; although mapped in the Vermont Natural Resource Atlas as an S3 (uncommon) high quality Silver Maple-Ostrich Fern Riverine Floodplain Forest, this wetland does not have the characteristics of that community.
g. **Habitat for rare, threatened or endangered species:** Not applicable.
h. **Education and research in natural sciences:** Not applicable.
i. **Recreation and economic benefits:** Not applicable.
j. **Open space and aesthetics:** Not applicable, based on its size.

Wetland D is a depression on the terrace above the river bank. Dominant vegetation includes reed canary-grass, grass-leaved goldenrod, purple loosestrife, jewelweed, riverbank grape, and groundnut under a canopy of box elder. All proposed development lies outside the 100-foot buffer zone of this

wetland except for a split rail fence to be installed at the request of the Burlington Conservation Committee.

a. **Water storage for floodwater and stormwater**: Although this wetland is in the Winooski River floodplain, but because of its small size, it does not significantly contribute to this function.
b. **Erosion and sediment control through binding and stabilizing the soil or shoreline**: While this wetland is adjacent to the Winooski River, it provides no more erosion or sediment control than "upland" shorelines nearby.
c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge**: Because it is in a depositional area, during flood events this wetland likely intercepts and retains sediments carried by the river.
d. **Fisheries habitat**: This wetland lies well above the normal river level and therefore does not contribute to this function.
e. **Wildlife habitat**: The wetland lies in an area that serves as a wildlife corridor along the river. There is evidence of use by otter and beaver along this part of the river.
f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** Not applicable; although mapped in the Vermont Natural Resource Atlas as an S3 (uncommon) high quality Silver Maple-Ostrich Fern Riverine Floodplain Forest, this wetland does not have the characteristics of that community.
g. **Habitat for rare, threatened or endangered species:** Not applicable.
h. **Education and research in natural sciences:** Not applicable.
i. **Recreation and economic benefits:** Not applicable.
j. **Open space and aesthetics:** Not applicable, based on its size.

Wetland E is a large floodplain forest upstream (to the east) of the proposed development, extending into South Burlington. Although this wetland is entirely off the subject property, the 100-foot buffer extends as far as proposed Building B and its parking lot. Proposed impervious acreage within this buffer zone will be 0.02 acres, which represents a 0.12 acre reduction from the existing 0.14 acres.

a. **Water storage for floodwater and stormwater**: This wetland is the first significant floodplain area on the Winooski as it enters Burlington, and because of its location on the outside of a river bend, very likely intercepts, slows and stores floodwaters.
b. **Erosion and sediment control through binding and stabilizing the soil or shoreline**: This wetland receives the full force of the river during high water events, and is able to withstand erosive forces by absorbing and ameliorating currents in its dense vegetation.

c. **Surface and groundwater protection, including sediment and toxicant retention, nutrient retention or transformation, and groundwater discharge or recharge**: Because it is in a depositional area on the outside of broad bend in the river, this wetland intercepts and retains sediments and detritus. There is evidence that material that is washed downstream is carried far into this wetland during high water events.
d. **Fisheries habitat**: This wetland likely provides fisheries habitat during high water events when it is flooded.
e. **Wildlife habitat**: The wetland lies in an area that serves as a wildlife corridor along the river. There is evidence of use by otter and beaver along this part of the river. In addition, in combination with Centennial Woods, it is an important part of a 200+ acre wooded section of the city that provides habitat for a diverse wildlife community.
f. **Example of natural community types that are exemplary, rare or make an important contribution to the natural heritage of Burlington and Vermont:** This wetland comprises about 13 acres, and in combination with wetlands across the river, constitutes a significant wetland complex. This wetland is classified as an S3 (uncommon) but high quality Silver Maple-Ostrich Fern Riverine Floodplain Forest.
g. **Habitat for rare, threatened or endangered species:** Not applicable.
h. **Education and research in natural sciences:** Not applicable.
i. **Recreation and economic benefits:** Not applicable.
j. **Open space and aesthetics:** The wetland is visible from the river and from the southbound Interstate 89 Bridge, and although it is perceived as forest rather than wetland, it represents an aesthetic natural community in an otherwise urban environment.

Summary

The buffer zones of two wetlands on or near the property extend into areas proposed for development: a small slump area on the bank of Centennial Brook and a large floodplain forest to the east. The first of these wetlands performs no functions at a significant level, but the second, larger one is significant for water storage for floodwater, erosion and sediment control, surface and groundwater protection, wildlife habitat, exemplary natural community, and open space and aesthetics. This wetland is shown on the Vermont Natural Resources Atlas as covering over 19 acres, but the on-site delineation shows that it does not extend as far downstream as shown on the Atlas and probably measures about 13 acres.

The proposed project will have no direct impacts on jurisdictional wetlands, but will impinge on wetland buffer areas in two places:

1. Near Wetland A (on Centennial Brook) where proposed actions will impact 0.09 acres, but will result in a reduction of 0.35 acres of impervious surface, and
2. Near Wetland E (the large wetland) where proposed actions will impact 0.12 acres.

Because there will be a reduction in the amount of impervious surface area, and because stormwater treatment and erosion control measures will be employed, neither of these two impact areas will negatively affect the wetlands and their protected functions.

Sincerely,

Errol C. Briggs