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Ecological Assessment of BC Community Housing, LLC, property  
Burlington, Vermont

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This ecological assessment represents the results of a ten-hour field inventory of the BC Community Housing property I made on October 5 for owner Eric Farrell. I used the stand data and descriptions in the Tree Maintenance Plan, September 2015, by Greenleaf Forestry of Westford, VT, as background information, and will refer to the five woodland areas of the Tree Management Map of that plan in this report.

Woodland areas 1-4, plus the woodland within the planned housing area, are composed of canopy, understory, and groundcover plants indicative of highly disturbed forests. These woodlands are dominated by non-native species, some of which are invasive, and early successional and/or weedy native species. The prevalence of black locust, box elder, cottonwood, quaking aspen, white poplar, and Norway maple as canopy or subcanopy trees; common buckthorn and other woody invasives in the understory; and invasive garlic-mustard and non-native celadine in the ground layer is characteristic of areas that were cleared of native forest, and where the soil has been disturbed. A review of old aerial photographs of the property reveals that much of what is forested today was field or developed ground in 1937, with the notable exception of the west corner (area 4) and slope down to what is now the bike path (area 5). Furthermore, a 1974 photo shows sand was removed from a large area in what is now the lowest portion of field and woodlands.

The result of this past heavy land use history is that the woodland areas 1-4 are not recognizable as any natural community in the Vermont natural community classification (as described in Thompson & Sorenson's *Wetland, Woodland, Wildland*). In the "Redevelopment of the Catholic Diocese Property: Report for the Mayor of the City of Burlington" dated Nov. 12, 2001, Eric Sorenson, Community Ecologist for the Vermont Fish & Wildlife Department, describes a remnant patch of pine-oak-heath sandplain forest in woodland area 4. This is a rare natural community in Vermont that once characterized the extensive post-glacial delta sand deposits of western Chittenden County. Given the Adams-Windsor sandy soils characteristic of the sandplain community at the site, he describes the remnant as potentially of local significance, but not of statewide significance. I revisited this area and relocated the group of red oak and red maple he describes, but no characteristic sandplain natural community shrubs and groundcover. Instead I found many weedy species that would indicate moister soil conditions than typical sandplain natural community. There is a small flat area at the top of the slope in area 4 that the cemetery is currently using as a leaf/branch/stump dump that may have had some remnant sandplain species, but have been smothered by the dumping of organic material.

Woodland area 5 includes the very steep bluff slope leading down to the bike path. From an ecological perspective, I found this to be the most intact woodland on the property. It has a red oak-red maple dominated canopy with lesser amounts of a variety of other native hardwoods, and one pitch pine. The understory and groundcover includes many native shrubs and herbs, and few non-native and/or invasives. Interestingly, the species composition of the forested slope does not fit a pine-oak-heath sandplain forest natural community type. Instead, it might be classified as a red oak-northern hardwood forest type.

- ✓ I found no rare, threatened, or endangered plants during my autumn field inventory, though there was potential habitat for some rare species that I am familiar with from sandplain forest and other natural communities in western Chittenden County. In his comments on the Tree Maintenance Plan, Dan Cahill, Land Steward of the city's Park & Recreation Department, mentions the presence of Harsh Sunflower (*Helianthus strumosus*) on the property. I contacted Bob Popp, the Nongame and Natural Heritage Program botanist, who stated he had no
- ✓ knowledge of this state-threatened species at the site. Nor does the species appear at this site in the BioFinder GIS database on the web. I searched for the Harsh Sunflower and did not find it, though I did find a closely related Woodland Sunflower (*Helianthus divaricatus*) on the steep slope of woodland area 5. Woodland Sunflower is not a listed species in Vermont.

I could not confirm the species identity of Serviceberry, or Juneberry (*Amelanchier* sp.), that I found growing as a small tree/tall shrub on the bluff slope in woodland area 5. Based on the leaf shape, it might be *Amelanchier canadensis*, a species ranked SH, or State Historical, because it is known only from historical specimens. A return visit when it flowers in the spring is needed to positively identify the species.

As a final comment, I would recommend that the tree maintenance program strongly encourage the native species present at the site by removal of non-natives, and by thinning of both native and non-native species that would allow a greater diversity of native plants to thrive at the site. I am very much in favor of the idea of restoring the forest natural community at the site. But this goal is problematic, and would take a long time. It is problematic because it is not clear exactly what the presettlement natural community was at the site due to its heavily altered current condition. Also, many species that were part of the original natural community are no longer present and must migrate back to the site, or be reintroduced. Finally, the site is plagued with an abundance of invasive species.