TREE INVENTORY REPORT

(Refer also to Tree Inventory/Protection Plan by Baker Turner Inc., July 2014)

MANORS AT BELFOUNTAIN
Belfountain, Ontario

Prepared By

Baker Turner inc

Landscape Architecture / Site Design
8501 Mississauga Road, Suite 300
Brampton, Ontario L6Y 5G8
Tel. 905-453-9398
Jon Woodside, ISA Certified Arborist, ON-1439A
Nick Taylor, ISA Certified Arborist, ON-2068A

~ February 6, 2018 ~

INTRODUCTION

Location

The site is located south of Belfountain Ontario and Belfountain Conservation Area. This property is proposed for subdivision and development.

Figure 1: Site Context

Assignment

Baker Turner Inc. was retained to complete an inventory of trees within or adjacent to the proposed right of ways within the subdivided property. Trees were identified, trunk diameters measured and condition noted. Woodlots and stands of trees were assessed for general species makeup and condition but no comprehensive list of species was produced nor were individual trees inventoried.

SUMMARY

The site was visited in June 2014. It is a large site, composed primarily agricultural fields divided by treed hedgerows. Hedgerows are primarily composed of Black Cherry and Siberian Elm, though the hedgerow to the east features several over mature Sugar Maples. These trees are mostly poor to medium quality and in many cases there are heavy levels of vine through the canopies.

Along Old Main Street the landscape is more naturalized with plantation style woodlots which have developed over time with native species. A forested slope divides the naturalized areas from the agricultural plateau. The forested slope can be characterized as a Scotch Pine Cultural Coniferous Plantation (CUP 3-3). It is vegetated primarily with Scots Pine but has also seen the return of native forest species such as Sugar Maple and Black Cherry and understory species such as Alternate Dogwood, Red Elderberry, Chokecherry, Gooseberry and Thicket Creeper. Continuing along this successional trend it is likely that this naturalized portion of the property will develop into a Sugar Maple Deciduous Forest Ecosite (FOD 6).

In the center of the site along the north end, one section of the property is steeply sloped and has been left to pasture. The pasture is primarily vegetated with old field herbs and can be categorized as a Mineral Cultural Meadow (CUM 1).

A similar pasture (CUM 1) exists at the entrance of the site adjacent to both sides to the entry driveway as it approaches the naturalized Scots Pine Slope. Immediately along the driveway is a line of mature Sugar Maples. These maples are to be preserved where possible; however, the trees should be monitored on a continued basis once construction begins and continued after construction is completed for symptoms of decline due to disturbance. A loose woodlot of very poor quality Siberian Elms is present west of the entrance drive. All trees should be removed for safety reasons and in order to eliminate invasive species from the site.

Site Photos

Figure 1: Agricultural fields with treed hedgerows in distance.

Figure 2: View of Sugar Maple Hedgerow.

Figure 3: Scotch Pine Plantation.

Figure 4: View east of fallow portion of agricultural fields at northwest corner of site.

Figure 5: View west of group 'C' trees - poor quality Siberian elms.

Figure 6: View south of partly demolished foundation covered in vegetation.

Figure 7: Sugar Maple at old farm path entry

Figure 8: View down slope of old farm path

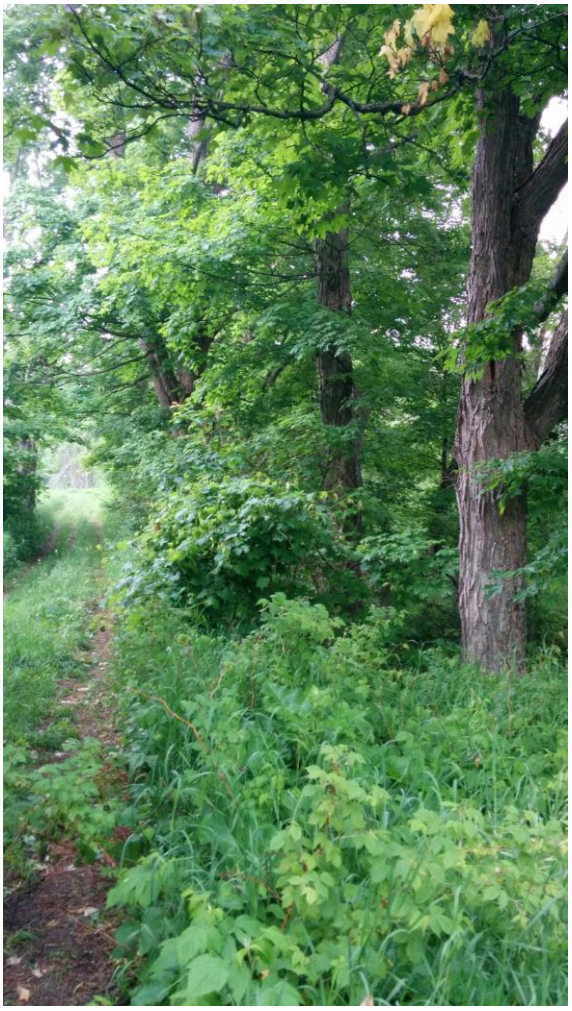

Figure 9: Sugar Maples along old farm path to be preserved

Figure 10: Poor quality Maple at old farm path entry to be removed

TREE REMOVAL & PRESERVATION RECOMMENDATIONS

- Refer to Tree Inventory & Preservation Plan (TR.1) for individual tree locations and descriptions.
- Remove trees, as identified on drawing TR.1, which are in conflict with road right of way construction and grading. Trees are to be felled away from the tree protection zones to avoid pulling and breaking of roots of trees which are to remain. These trees shall be removed with a qualified ISA certified arborist present and in a manner that causes no damage to the remaining trees.
- Preserve existing Sugar Maples along old farm path entry. Existing old farm path entry to be left in place to reduce impact to roots where possible.
- Existing driveway to be left intact where it is not in conflict with construction activities. Vegetation has already developed along the driveway demonstrating the positive qualities that will lead to the natural development of soil structure despite compaction from use in the past.
- Install snow fence tree protection hoarding around all trees and woodlots to be preserved near construction (refer to Tree Inventory/Protection Plan). Within the Tree Protection Zone (TPZ) (hoarded area) there must be:
  - no construction;
  - no altering of grade by adding fill, excavating, trenching, scraping, dumping, or disturbance of any kind;
  - no storage of construction materials, equipment, soil, construction waste or debris;
  - no disposal of any liquids e.g. concrete sleuth, gas, oil, paint;
  - no movement of vehicles, equipment or pedestrians;
- Perform canopy pruning to clean the crowns of dead, diseased, crossing, weak, and dead wood, and to provide adequate clearance for equipment and construction. No more than 20 percent of the live foliage is to be removed from tree. All pruning should be performed in accordance with the International Society of Arboriculture (ISA) Pruning Standard Guidelines.
- Perform root pruning where excavation is necessary. All roots are to be cut cleanly to the depth of root penetration (approximately 3 feet) when excavating for road installation within the dripline. Equipment such as a backhoe can be used until roots larger than one inch in diameter are encountered. When roots larger than one inch are encountered, they are to be further exposed by removing soil by hand and cutting them cleanly with a saw to a lateral root.
- Irrigate tree roots during drought conditions by deep root watering once per month throughout the growing season and the following year after work has been completed. Each use of irrigation shall wet the soil within the tree protection zones to a depth of 30cm. Watering must be done slowly to ensure that water does not run away from the root zone and to ensure soil around the root system of the tree is well saturated.

Remediation Zones

See Tree Inventory (TR.1) for location of remediation zones.

Agricultural Hedgerows – This zone is composed of poor to medium quality Siberian Elm and Black Cherry Trees. Many of the trees have been negatively impacted by the harsh winter as well as the heavy load of vines which have colonized these hedgerows.
Relevant remediation strategies: The good and medium quality trees in this grouping are to be maintained and protected where possible during construction following the tree preservation recommendations above. Where possible hedgerow ecosites to be maintained and enhanced with planting of native species
Remediation Planting list: White Pine, Eastern White Cedar, Trembling Aspen, Black Cherry, Red Elderberry Common Elderberry, Bush Honeysuckle,

Sugar Maple Hedge Row – This zone is comprised of over-mature Sugar Maple species.
Relevant remediation strategies: These trees are coming to the end of their life cycle and should be monitored on a regular basis for the maintenance of good health and structure. Where necessary, trees should be pruned for balance or removed where deemed hazardous. Where there are small canopy gaps, a new generation of sugar maple should be planted. In areas of heavy shade American Beech can be planted and interspersed between the maples.
Remediation Planting list: Sugar Maple, American Beech

Forested Slope (Groups 'E' & 'F') – This forested slope was replanted with Scotch Pine amongst a few other native trees. The Scotch Pine have now matured and new deciduous seedlings are emerging as the dominant next generation of forest cover. The Scotch Pine will slowly decline as increased shade from deciduous competitors reduces their vigour.
Target ecotype: Pine – hardwood mixed forest ecosite (FOM2)
Relevant remediation strategies: The levels of deciduous trees may not allow for further plantings of coniferous species. Where construction activities create canopy gaps these should be planted with White Pine to create an element of long-lived coniferous species as well as manage woodlot edge effects from forest removal. The centres of these forest zones are to be left as is and protected from all construction activities as discussed in the preservation recommendations above.
Remediation Planting list: White Pine, Black Cherry, Sugar Maple, American Beech

Meadow by Old Farm Path Entry – Trees along north east of entrance to be preserved where possible. Young Sugar Maples should also be preserved and encouraged as the next generation of shade trees. All Siberian Elms should be removed and street trees be provided along the road. The remainder of the meadow area is to be retained.
Relevant remediation strategies: Edges of entry to be re-graded and seeded with upland seed mix throughout meadow and facultative seed mix in road side swales. See list of seed mixes below.

Compensation Planting:

Compensation planting should be provided on site with respect to the plantings that have been removed due to construction activities. We suggest 3 trees be planted for each tree removed, which is a common ratio throughout the region.

There are 47 trees in total recommended for removal due to construction activities. 7 trees are identified on the tree inventory list (refer to TR.1). 40 trees, which are part of existing tree groupings (agricultural hedgerows), were assessed for general species makeup and condition and are outlined in zones on page 8 of this report. A total of 141 trees should be planted on the site as compensation for the trees lost due to construction activities. Where these trees are planted along road right of ways the trees should be a minimum of 60mm caliper at breast height. Where there trees are not along road right of ways it is more suitable to plant tall whips of a minimum 200cm ht. These small trees are younger and therefore more adaptable and have a more balanced branch structure. Tree species and locations to be outlined on Landscape Plan and will conform to CVC approved tree species list.

Seed Mixes:

Facultative Seed Mix (for roadside swales)

Species	% of mix
Bebb's Sedge (Carex bebbii)	1%
Lobelia siphilitica	1%
Verbena hastate	10%
Eupatorium perfoliatum	1%
Scirpus atrovirens	1%
Carex vulpinoidea	27%
Aster novae-angliae	2%
Aster puniceus	1%
Poa palustris	20%
Juncus effuses	2%
Eupatorium maculatum	1%
Mimulus ringens	2%
Asclepias incarnate	1%
Glyceria grandis	2%
Elymus virginicus	27%
Scirpus cyperinus	1%

-Seed rate: 22kg/ha.

Upland Seed Mix

Species	% of mix
Rudbeckia hirta	10%
Aster cordifolius	1%
Anemone Canadensis	1%
Solidago Canadensis	2%
Asclepias syriaca	2%
Oenethera biennis	25%
Euthamia graminifolia	1%
Carex granularis	15%
Aster novae-angliae	1%
Elymus riparius	40%
Clematis virginiana	1%
Monarda fistulosa	1%

- Seed rate: 22kg/ha.

- All seed mixes should be applied with a cover crop of Common Oats (Avena sativa) applied at a rate of 22kg/ha.

Jon Woodside
Baker Turner Inc.
ISA Certified Arborist, ON-1439A

Nick Taylor
Baker Turner Inc.
ISA Certified Arborist, ON-2068A