EVALUATION OF 10.14-ACRE PARCEL

AT 1381 MAPLE ROAD, CITY OF ANN ARBOR, MI

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Prepared for
Neighborhood Group
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Evaluation of 10.14-Acre Parcel (1381 Maple Road)

A. Background of Parcel

This 10.14-acre land parcel, which is currently situated within Ann Arbor Township and located at 1381 Maple Road, will pass to the City of Ann Arbor once a site plan is accepted by the City of Ann Arbor. See Figure 1 for Zoning and Area Map. At present this property is covered by a young woodland that covers about 60 percent of the land area. In addition, brush covers about 40% of the parcel, and three wetlands which amount to 1.52 acres, occur within the wooded and brushy areas. An old house foundation, and what appears to be an abandoned residential water well, occur on a high spot located directly east of Maple Road. No other structures are present on this vacant, wooded property.

On 2-4-03 the Planning Commission of the City of Ann Arbor rejected an area plan that was submitted by Atwell-Hicks, Inc. on behalf of the developer, i.e., the Archdiocese of Lansing, Michigan. The development proposal included a rezoning of the residential parcel from R1 to R3. The rezoning would allow an increase in the residential density from 2 units per acre to approximately 10 units/acre, as well as provide for clustered single family units. Because of the relatively high "density by right" associated with the R3 (Townhouse) zoning district, the Planning Commission of the City of Ann Arbor recommended denial of the area plans submitted by Atwell-Hicks, Inc.

B. Concerns of the Neighbors near Dicken School

Single-family homes on individual lots currently exist on the east and south sides of the subject 10.14-acre property. Pauline Street occurs to the north, and Maple Road is present on the west margin. Given the wooded nature of the site, and the proximity to Dicken Elementary School, the residential neighbors that border the subject parcel would prefer that the site be maintained as a park. As proposed, a clustered development with 60 or so residential units would not only lead to a loss of most of the woodlands, but would create considerable runoff along with the potential for flooding of home sites near the northeast corner of the site. Whereas a site plan has yet to be prepared for the subject 10.14-acre parcel, including a stormwater management plan, the neighbors wish to go on record opposing the proposed rezoning from the R1 to R3 district.

C. Drainage of the 10.14-Acre Property

Because the elevational differences on site range from a high of 988 feet near Maple Road to a low of 955 feet near the northeast corner of the property, the subject wooded parcel has 33 feet of vertical relief and contains slopes that vary from 2 to 12 percent. Wetland B drains the central part of the parcel as elevations range from 978 to 979 feet near Maple Road to 949 feet near Pauline Street (offsite to the immediate north). See enclosed site plan drawing by Atwell-Hicks (Topographic Survey & Site Analysis). This area plan drawing has been modified by J & L Consulting as part of this report.

The area plan by Atwell-Hicks, which was submitted along with the rezoning proposal, contains the probable site plan. See Sheet 123-172-3 (by Atwell-Hicks, dated 5-28-02). Given a probable runoff coefficient of the developed portion of the site at about 0.5 (C-Value), and a need to maintain the hydrology of the wetlands in the plans, considerable sheet flow from the clustered single-family units will likely be shunted to the wetlands. Not only does Wetland B drain to the northeast, a ditch on the east edge of the property drains northward to the northeast corner of the property. Because it is also likely that the stormwater from the two proposed stormwater detention basins will be discharged to the adjacent wetlands as well, increased wetness and possible flooding will occur in the extreme northeast corner of the subject 10.14-acre parcel when development takes place.

The current drainage of much of the undeveloped parcel already drains offsite to the northeast, i.e., across Lot # 33. This runoff water then drains to the northeast onto the adjacent multi-family development. The runoff from the wooded 10.14-acre parcel is joined by runoff from curbside catch basins on Stephen Terrace (street) that is being discharged into a mixed forested/wet meadow wetland on the adjacent multi-family property located to the northeast. This wetland on the multi-family site is currently being inundated by these two drainage sources, as evidenced by standing water (ice) within the wetland. Development of the 10.14-acre property will certainly exacerbate the flooding of the offsite wetland, and will probably cause die-back of some of the trees within this wetland on the multi-family parcel.

D. <u>Soils and Runoff from the Subject Parcel</u>

The groundwater recharge map of Washtenaw County, which is quite general, reveals that the groundwater recharge potential of the 10.14-acre parcel is low. That low recharge occurs because the soils on site are not sandy or gravelly, but are somewhat fine grained which partly inhibits surface infiltration of water. According to the Sheet # 26 of the *Soil Survey of Washtenaw County, Michigan*, the soils on site consist of the Miami Loam. See enclosed Figure 2 (Soils Map). Soil Types MmC and MmB correspond to the Miami Loam soil type, with slopes ranging from 2 to 12 percent. Silt and clay, i.e., fine soil fractions, comprise 20 to 50% of the Miami Loam soil constituents.

What is significant in regard to the soil types on site is that the infiltration rate of these soils ranges only between 0.6 to 2.0 inches/hr (Table 7, *Soil Survey of Washtenaw County*). Thus, during intense precipitation events, or during sudden snow melt periods, water will largely runoff off the surface, rather than infiltrate into the ground. This runoff potential will of course be increased when fairly intensive development occurs, i.e., the possible clustered development of the R3 zoning of the medium density Townhouse Dwelling District. In order to maintain the hydrology of the wetlands, and by providing the usual outlets for the two proposed stormwater detention basins, the probable Townhouse development on the 10.14-acre parcel will create excessive runoff through the existing wetlands on the subject parcel which, in turn, will exceed the storage capacity of the offsite wetland on the adjacent multi-family site.

E. Quality of the Woodlands

In an attempt to justify the change in zoning from R1 (Single Family) to R3 (Townhouse Dwelling with cluster option), the developer has characterized the woodlands on site as being of "low quality with invasive species". Moreover, the extent of the woodlands has been minimized, and the brush on site over-emphasized. This characterization of the woodlands on the 10.14-acre property is not accurate.

By walking the perimeter of the property, the undersigned has determined that the woodlands on the 10.14-acre parcel have been undermapped. Approximately 60 percent of the subject parcel is wooded, and these woodlands contain young to medium-aged trees. Whereas a shrubby strip of brush is present on site as a diagonal area, not all of the woodlands consist of invasive tree and shrub species. Only the shrubby brush contains an invasive shrub, which in this case is thorny buckthorn (*Rhamnus cathartica*). Grey dogwood, small American elm, and some hawthorn also occur within the areas of brush. In contrast, within the wooded area, there is a diversity of tree species, including white oak, red oak, American elm, silver maple, red maple, hop hornbeam, and white ash. Some old and dead apple trees also occur in the northwestern portion of the property.

Both the woodlands and the areas of brush support a variety of small mammals as well as considerable bird life. While walking the perimeter, the undersigned observed tracks of squirrels, cottontail rabbits, red fox, and even one track of white-tailed deer. In addition, the birds that were observed on site included blue jays, cardinals, black-capped chickadees, and mourning doves. Hence, even the areas of brush support considerable animal life, and provides important habitat for small mammals and birds. Thus, the characterization of the woodlands and/or brush areas as being of "low quality" is not supported by the field observations.

F. Quality of the Wetlands

Although the wetlands on site are not real wet, and have developed over time on former farmland, these wetlands do not appear to be of low quality. The vegetation is not homogeneous, and these wetlands appear to support considerable animal and bird life. However, the main function of these wetlands may well be to store and slowly release runoff water from the nearby higher ground and sloping hills. Given the moderate rates of runoff currently on site, even within the woodlands and brush-covered areas, the wetlands receive water from the higher elevations. This water is slowly transported down slope in the wetlands, and much of it ends up in the northeast corner of the property, or in the ditches along Pauline Street. Hence, to characterize the wetlands on the subject property as low quality is simply not accurate.

With regard to the diversity of the wetland vegetation within Wetland B, the following plant species were noted from the parcel margins: *Carex* sedge, slender rush, reed canary grass, tall goldenrod, wild grape, silky dogwood, honey suckle, small American elm, a few highbush cranberry shrubs, glossy buckthorn, grey dogwood, and small silver maple trees. In Wetlands A and C, I observed forested wetlands which contained eastern

cottonwood, red (green) ash, black willow, silver maple, and red maple trees. Therefore, if wetland function and vegetation diversity are part of the rating of wetland quality on site, then it appears as though the wetlands on site are of moderate quality, and generally not of low quality.

Summary and Recommendations

Based on the limited field investigation, and study of the area plans submitted by Atwell-Hicks, Inc., it appears as though the proposed rezoning from R1 (Single Family) to R3 (Townhouse Dwelling) with clustered units is not compatible with the slopes and soils on the subject 10.14-acre property.

Whereas one might conclude that by clustering the proposed residential units, that would be a feasible mechanism to protect the wetlands and some of the woodlands on site. However, since much of the upland areas or non-wetland areas on site are wooded, essentially the proposed development is largely displacing the woodlands. Furthermore, though the proposed area plan protects the wetlands from development, the sheet flow drainage into the wetlands from the developed areas, and with discharge from the two proposed stormwater detention basins, the wetlands on site will probably receive too much stormwater, including in the northeast corner of the property.

Clustering of units is generally an appropriate density measure when the soils are rather permeable and when there is not much slope on site. In the case of the 10.14-acre parcel, the soils are somewhat loamy and fine grained, which results in relatively low infiltration rates. Moreover, the slopes on site range from 2 to 12 percent, which means that runoff will be considerable, especially where the clustered residential development is planned. In addition, given the need for on-site detention, the real problem occurs when the outlets are provided for the stormwater basins. At present, the two options are to: 1) discharge to the wetlands in the northeast corner of the property, and 2) to discharge some of the stormwater to the roadside ditches along Pauline Street.

Discharging stormwater to the wetlands in the northeast corner of the parcel may not be prudent because water problems already exist at homes near that part of the parcel. Wetland B drains to the northeast corner, and a ditch along the east margin of the 10.14-acre parcel currently drains northward to the northeast corner of the subject property as well. These two sources of runoff water cause considerable wetness and some flooding on the offsite lot closest to the northeast corner of the property. Hence, water management is currently a problem near the northeast corner of the subject property.

In addition, the forested/wet meadow wetland located offsite to the northeast, i.e., on the adjacent multi-family property, is presently receiving considerable runoff from the parcel under investigation as well as from drainage from the roadbed of Stephen Terrace. Adding more runoff, even at a controlled rate, may well exceed the capacity of the offsite wetland to store and transport the additional water without ecological damage.

Finally, as regards the stormwater management, discharging stormwater into the ditches of Pauline Street may not receive approval from the Drain Office of Washtenaw County. The culverts under Pauline Street are of relatively small diameters (orifices), and there are no debris guards to prevent blockage. Also, this additional stormwater discharge may exacerbate the existing stream problems of Mallett's Creek and Allen Creek. Hence, the developer may wish to employ stormwater retention measures instead of the usual stormwater detention basins.

Therefore, the future development of the 10.14-acre wooded property, i.e., site plan preparation, should take place only after careful study and planning. The neighbors, particularly those near the northeast corner of the subject property, do not want offsite impacts resulting from excessive runoff and stormwater discharges. Thus, it is the wish of the neighbors that the property in question remain in its current natural state. If, on the other hand, the property is developed for some limited residential purposes, a single-family development at about 2 units per acre, as shown on Alternate Plan B (by Atwell-Hicks, Inc) may be acceptable if the stormwater management plan does not cause adverse offsite impacts such as increased flooding. Alternative Plan A is very unrealistic in terms of number of units, wetland fill, and connections with Dicken Drive.

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Principal, J & L Consulting

Enclosures: Sheet # 123-172-2, Area Plan by Atwell-Hicks, Modified by J & L Consulting Services as part of this Report
Figure 1 – Parcel and Zoning Map, from City of Ann Arbor
Figure 2- Soils Map, taken from Sheet 26, Soil Survey, Washtenaw Co.