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Dunbar Free Library, Board of Trustees
c/o Ed Jenik
401 Route 10 South
Grantham, NH 03753

RE: **MacNeil Property Purchase**

Dear Ed and Members of the Board,

I have completed an initial assessment of building expansion and parking possibilities for the Dunbar Free Library (DFL) assuming the purchase of the neighboring MacNeil property. On the face of it this would appear to be a very good opportunity for DFL and the completion of a concept sketch showing a potential addition and parking possibilities seems to confirm this.

The sketch has been created based on a topographic survey that also located the existing structures, sidewalks, parking areas and other visible site features. What was not located were existing buried utilities such as water and sewer lines, septic systems, propane tank and anything else below ground. They can be sketched on using the existing records, but the locations are not critical to the analysis being prepared. The boundaries shown on the Concept Sketch are based on historic surveys and the surveyor's location of stone walls and existing monuments.

Septic System Assessment:

There are existing septic systems on both properties with a total capacity of 825 GPD (*gal. per day*) (300 GPD library, 525 GPD MacNeil property). Libraries don't have a straight-forward unit flow for determining the size of a leachfield. They also don't tend to be particularly large water-using facilities but if there is a multi-function room with a kitchen available for public use then the septic capacity is often determined in large part based on the size and use of this room (i.e. how many people will be using it for any given function).

To assess the potential septic system capacity of a particular property, septic designers will typically determine what's known as the "lot loading capacity" of the property. This is done by using a standardized formula contained in the NH DES septic system rules that yields how much land area is needed to support a particular design flow (i.e. the design flow of the current library system is 300 GPD). The formula can also be used to determine the maximum allowable design flow for a given area, in this case the area of the two lots combined. The formula considers the soil type and slope of the land, however the area contained within the protective radius of the well cannot be used in the formula.

By utilizing the existing off-site well the available capacity of the property approaches 1700 GPD. Utilizing an on-site well the capacity is closer to 1000 GPD. In either case, the addition of the MacNeil property should provide enough additional area to support substantial addition to the existing building.

Parking Lot Assessment:

One area of great need for the library concerns increasing the available parking and creating a reasonable traffic flow through the lot with adequate aisle widths so that the very cumbersome manipulations that are now needed to back around from some of the spaces and leave the site become a thing of the past. I am happy to report that the addition of the MacNeil property will provide an excellent opportunity for the library to increase the spaces available from 15 to 38 or more while allowing full-width aisles and safe circulation for both vehicles and pedestrians.

The Concept Sketch shows a basic approach for a new library parking lot with several spots for quick in/out traffic, such as for dropping off books, etc., two handicap spots close to the building for ADA accessibility and then the main parking area separate from that. The concept shows 38 total spaces, however I did not try to maximize the number of spaces. During design development for a new parking lot several varying configurations should be presented and judged based on any number of factors desired by the Trustees. These factors could include number of spaces, ability to phase in the construction, ease of circulation, landscape areas, etc.

State Permitting Needs for Future Expansion:

When expansion of the building is considered and/or reconstructing the parking lot, there are several State permits that will be required. Chief amongst these is permitting required by the NH DES Comprehensive Shoreland Protection Act (CSPA). The CSPA regulates the impacts resulting from construction within 250' of certain streams and rivers, including the North Branch of the Sugar River. As can be seen from the Concept Sketch most of the property lies within 250' of the river and is thus subject to the provisions of the CSPA.

While there are many facets of the CSPA that can be discussed, perhaps the section with the most potential to limit construction activities concerns caps on creating impervious surfaces on the property. The existing DFL property has about 42% impervious area within the protected shoreland. The existing MacNeil property has about 45% impervious area within the protected shoreland. The maximum impervious allowed by the CSPA Rules is 30%, therefore both properties currently are non-conforming with respect to this section.

However, since the intent of the purchase would be to raze the existing MacNeil structures and remove the parking this will lower those existing impervious numbers. The existing parking area for the library, in my opinion, should also be removed. With all this hard surface removed the combined properties will then be at ±10% impervious (i.e. existing library structure only), well within the 30% cap. This creates a significant opportunity and space for adding on to the existing library. The new parking could be constructed using pervious technologies and thus not

be constrained by the upper impervious limit mandated by the CSPA. The sandy soils present on-site are well suited to these technologies.

The other primary State permits needed are NH DOT Access permit and the septic system permitting for any expansion of the building.

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The analysis contained herein would seem to indicate that the purchase of the MacNeil property will enhance the library property and allow further building enlargement while also providing room for a proper and safe parking lot.

Please don't hesitate to contact me if there is any further review you would like or anything already reviewed analyzed and discussed in greater detail.

Very Truly Yours,

Blakeman Engineering, Inc.

Peter J. Blakeman, PE