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To: **Chair and Members of Bernards Township Planning Board**

Subject: **Homes, Schools and Taxes**

**Introduction:** I believe that most members of the Planning Board, most members of the Township Committee, and most township residents want to preserve open space and avoid adverse tax impacts from rising school enrollment. This proposal addresses these goals. I plan to present it to the board at its Master Plan meeting on June 24 or on July 29, whichever works best for the board.

This proposal was originally in a letter to the Township Committee on May 11, 2005. It rested on an analysis of data for the 2004-2005 school year and for home size data and school taxes at that time. I have not updated the analysis. Bill Draper and I discuss these issues from time to time. He advises me that there is no new school data that changes the key findings of the 2005 analysis. I will return to this below.

The 2005 letter included references to the quarry. I have deleted these. Otherwise the comments below are almost identical to what I wrote four years ago.

**Proposal in Brief:** The problem of rising school taxes points out a serious flaw in Bernards land use policies: they have encouraged, and they still encourage too many new single family homes. These are the primary cause of rising school enrollment. **It is time to change our land use regulations to stop, to the fullest extent possible, further construction of new single family homes.**

Many want to stop all development, but this is not practical. So the question is: What kind of development should we allow? The objective in this letter is to show that multifamily homes are generally a better choice for residential development in Bernards than single family homes.

Specific proposal:

**Allow the substitution of two townhouse units for each single family unit that is allowed under current zoning, in those locations where there will be no adverse impact for nearby property owners.**

A replacement ratio of two townhouses for each single family unit was considered to fair and reasonable in 2005. I talked to a successful and respected local builder at Charter Day this year and he confirmed this ratio.

**Residential Development and Open Space:** I believe many understand intuitively that 10 or 100 townhouses require less land than 5 or 50 single family houses, and that there will be less land disturbance during and after their construction. Let's look at some data.

- The Pinewoods and Overlook tracts had a common owner and were approved for a total of 12 single family houses on a total of 31.5 acres. The effective density is 0.4 units per acre. The zone requires 2-acre minimum lots. Virtually all of the land on both tracts has been disturbed.

Amherst Mews is an upscale townhouse community in The Hills. Its density is about 4 units per acre. 24 similar townhouses could have been substituted and placed on either of the Pinewoods or Overlook tracts. The disturbed land would have been about 6 acres, 19% of the total.

- Nine single family houses are approved for the 21.5 acre Bettler tract between the railroad and The Barrons, for an effective density of 0.4 units per acre. The zone requires 1-acre minimum lots. The tract has mature woods and slopes descending to a brook.

Substitution of 18 townhouses like those in Amherst Mews would use only 2.2 acres, about 10% of the tract. They could be placed to minimize adverse environmental effects and would be more compatible with The Barrons.

- The Laurel Court subdivision was approved for 4 single family units on the 5.9 acre tract that is east of the intersection of Mt Airy Rd with I287. This is a 1-acre residential zone. Two units have been constructed and it appears that the whole tract will be disturbed.

Eight townhouses would occupy only 2 of the acres. They could be located on the east part of the tract, where they would have better shielding from I287 noise by existing sound barriers. If faced towards I287 with the road in front, the backyards would get additional noise shielding from the buildings themselves. The lots that front on Lake Rd would not have another road at their rear boundary. The Mt Airy Rd streetscape would be better.

When facts support intuition it's hard to deny the conclusion: **Substitution of two townhouses for each single family house will use and disturb less land.**

My main focus here is on the beneficial fiscal impact of this substitution, and I will turn to that below.

**HST Rules and Background :** There is abundant data regarding homes, schools and taxes that lead to the empirical rules that follow.

**Rule 1:** Houses with more bedrooms tend to be home to more public school students than houses with less, other things being equal.

**Rule 2:** Single family houses tend to be home to more public school students than multifamily houses, other things being equal.

**Rule 3:** Multifamily households pay in the aggregate more school taxes per student than single family households, other things being equal.

There is an important corollary to Rule 3: **In the aggregate, multifamily homes generate fiscal profits; single family homes produce fiscal losses.**

Let's call these "HST Rules" [homes, schools, taxes]. They are intuitively reasonable. They rest on solid data. I have never seen any contrary evidence and doubt that there is any.

I had my first lesson in this subject in 1974 when I looked at extracts of 1970 census data for Somerset County. Bernards houses had more bedrooms on average than any other municipality in the county. Bernards also had the highest fraction of school age children. As early as 1970 Bernards land use policy encouraged large houses with more bedrooms and more school children.

Later in the 70s we learned about work done in the Rutgers Center for Urban Policy Research. They published reams of data on housing types, public school students, and the fiscal impacts of different kinds of development. This data supports the HST rules. I supported the move to multifamily homes in the 70s partly because of this data.

I got an update from Rutgers in 1997. It confirmed the earlier relationships among housing types, bedrooms, and students.

We owe a great debt to Bill Draper for accumulating, organizing, and analyzing this kind of data for Bernards over many years, and for publishing the results. His data and reports support the three HST rules.

**Data and Analysis:** I have analyzed data for 9,515 township homes. School enrollment data is for Fall 2004. Tax assessments and the school tax rate are for 2004. Not included are Bethel Ridge, Fellowship Village, Metheny, Ridge Oak, and Sunrise. Also excluded are houses on lots of 10 acres or more.

With the exclusions, the quantity of homes I analyzed is 99% of those analyzed by Bill Draper in his report "Homes and Public School Students / December 2004". In his report the data is aggregated to streets. In order to get a better fix on the influence of bedrooms, I extended the analysis to individual homes. For this reason there are some differences between Bill's results and mine, but they are small.

I have divided the homes two ways: By type, single family vs multifamily. By year of construction, old vs new. "New" means the ten years from 1995 thru 2004.

**HST Rules, Patriot Hill and Patriot Ridge:** Each of the HST Rules contains the key phrase "other things being equal". In The Hills we have an ideal opportunity to test these rules in a situation where other things really are equal. Patriot Hill is all townhouses and Patriot Ridge is all single family houses. They sit side-by-side on top of Schley Mountain. They were both constructed by Toll Brothers during the years 1998-2002. They were probably designed by the same architects and planners. The same managers probably managed the same work force and achieved the same quality of construction with the same labor costs. They sell into the same overall market.

Data for bedrooms and students for these two communities is in Table 1 below and is displayed in attached Chart 1.

**Table 1: Dwelling Types, Bedrooms, Students  
Patriot Hill and Patriot Ridge**

Bedrooms	Students per Dwelling in Patriot Hill	Students per Dwelling in Patriot Ridge
	Townhouse	Single Family
3	0.32	
4	0.55	0.97
5		1.23

Two features stand out in the table and in the chart. The students increase with bedrooms in both cases. This is evidence for HST Rule 1. The students in Patriot Ridge single family homes with four bedrooms are greater than those in Patriot Hill townhouses with four bedrooms. This is evidence for HST Rule 2.

Data for both communities is summarized in Table 2 below. Row 5 contains evidence for HST Rule 3.

**Table 2: Dwelling Types, Assessments, Students  
Patriot Hill and Patriot Ridge**

Statistic	Patriot Hill	Patriot Ridge	Ratio
	Townhouse	Single Family	
Total Units	257	193	
Total Students	93	194	
Average Students per Dwelling	0.36	1.00	1 to 2.8
Average Assessment per Dwelling	\$443,170	\$680,919	
Average Assessment per Student	\$1,224,672	\$677,409	1.8 to 1

**HST Rules, Whole Township:** In its regular housing stock Bernards currently has three kinds of multiple dwellings: condo apartments [eg Potomac Drive in Spring Ridge], townhouses [eg Lord Stirling Village, Patriot Hill], and twin houses or duplexes [eg Arbor Circle in The Cedars, Crown Court Dr]. I have lumped all of these in the category "multifamily" and compared them with single family homes throughout the township.

There is a small quantity of single family units in Spring Ridge. Because they are part of the PUD, which is mostly multifamily, I include them with the multifamily units.

Results for the whole township are in Tables 3 and 4 below and in Chart 2 attached.

**Table 3: Dwelling Types, Bedrooms, Students  
All Homes in Bernards Township**

Bedrooms	Students per Dwelling in Multifamily Homes	Students per Dwelling in Single Family Homes
1	0.02	
2	0.14	0.27
3	0.32	0.54
4	0.62	0.89
5		0.97

Again we see an increase of students with an increase in bedrooms, and this is true for both multifamily and single family units. This proves HST Rule 1 for Bernards Township. For each of three bedroom counts [2, 3, 4], there are more students in single family homes than in multifamily homes. This proves HST Rule 2.

Chart 3 shows students separately for new and old homes. New single family units, defined as 1995 and later, are home to more students than old ones. It shows that new single family units have more students than old ones. This is not a surprise, because new single family homes are usually purchased by families with children. In fact, 62% of new single family homes have public school students, but only 40% of old ones do.

Data in Table 4 below on Row 5 proves HST Rule 3 for Bernards Township.

**Table 4: Dwelling Types, Assessments, Students  
All Homes in Bernards Township**

Statistic	All Multifamily	All Single Family	Ratio
Total Units	4,121	5,394	
Total Students	771	4,311	
Average Students per Dwelling	0.19	.80	1 to 4.2
Average Assessment per Dwelling	\$290,000	\$607,000	
Average Assessment per Student	\$1,588,000	\$759,000	2.1 to 1

Data for new homes are in Table 5. Results are slightly different but show the same pattern.

**Table 5: Dwelling Types, Assessments, Students  
New Homes in Bernards Township**

Statistic	New Multifamily	New Single Family	Ratio
Total Units	951	1,271	
Total Students	287	1,411	
Average Students per Dwelling	0.30	1.10	1 to 3.7
Average Assessment per Dwelling	\$463,000	\$841,000	
Average Assessment per Student	\$1,533,000	\$761,000	2.0 to 1

**Explanation of Rules and Relevance:** Some small families purchase large homes for investment or other reasons. And some large families live in small homes, because that is all they can afford. But it is intuitively reasonable, and the evidence strongly supports the proposition that larger families with more children tend to live in larger homes with more bedrooms. This is HST Rule 1.

The evidence also strongly supports HST Rule 2. Yards are more important for families with children. And the outside work of home and yard are easier and more fun for young and middle age adults who may also be parents. These are the probable reasons for the rule.

Single family homes tend to have more bedrooms than multifamily units. The averages for the township analysis are 3.9 and 2.2 bedrooms, respectively. This plus Rule 2 are the reasons why single family homes have four times the children. **Up to four typical multifamily units could be substituted for a typical single family unit before student enrollment would increase.**

[Bill Draper's most recent report with this statistic was published in March 2008. It confirms the 4:1 ratio of students in single family units to those in multifamily units.]

Note the use of the word "typical" above. Each substitution proposal should be reviewed carefully to assure that the goal of lower enrollment is really met. The data in Table 3 suggests that up to six 2-bedroom multifamily units could be substituted for one 5-bedroom single family unit, and still have fewer students. Three 3-bedroom multifamily units might not be a good substitute for one 4-bedroom single family unit.

The explanation for HST Rule 3 is more difficult. The reason probably lies with the high core costs in any home. Expansion to more bedrooms is relatively less costly. Same for the increase in the associated land. Taxes follow assessments, and these follow costs.

In 2004, the average assessment for a 2-bedroom multifamily unit is \$248,000 and for a 4-bedroom single family unit it is \$630,000, a ratio of 2.5 to one. Table 3 shows the ratio of students to be [0.89 over 0.14] or 6.3 to one. The quantity of public school students rises faster, when home size increases, than does the cost of the home and the assessment.

Whatever the explanation, the facts are clear: **Typical multifamily homes are fiscally superior to typical single family homes.** This is the message in HST Rule 3.

Note that nothing in these conclusions is new or novel or should be controversial. The information contained in the HST Rules has been in the public domain since the 70s or before. My analysis only brings it up to date in Bernards Township. [Written in 2005.]

Our township data, supplemented by data from Rutgers, can be used to assess any proposal to substitute multifamily for single family units. For example, if we want to consider mid-rise apartment buildings, something Bernards does not now have, Rutgers probably can supply relevant data. [I am not recommending mid-rise apartment buildings.]

**HST Model:** It is possible to construct a simple model in Excel that answers what-if questions. An example follows.

Table 5 above shows that 1,271 single family houses were constructed in the 10-year period starting in 1995, and that these contributed 1,411 students to the public schools in the fall of 2004. This is 28% of the total enrollment for the 9,515 homes that were analyzed.

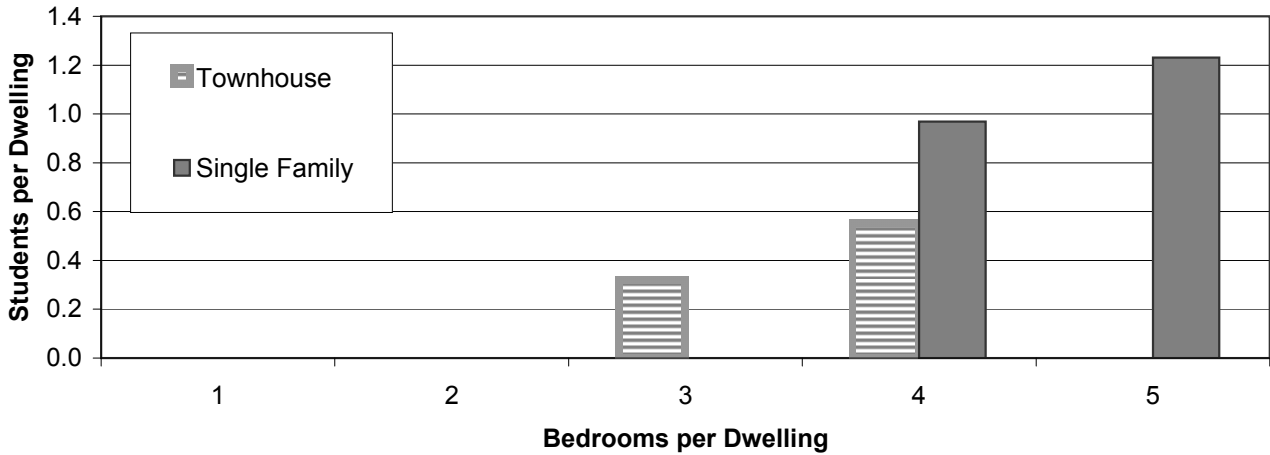
Suppose that all of these single family units had been replaced by multifamily units of the kind that was built during this period. The model indicates that enrollment would be less by 1,026 students and the school tax rate would be lower by \$120 per \$100,000 of assessed value. These are both very significant amounts..

**Wrapup:** It is clear, I believe, that townhouse units are preferable to single family units in many locations, and that they should be considered whenever there would not be an adverse impact for nearby property owners. This option should be added to our land use regulations. Please consider this as you revise the township Master Plan.

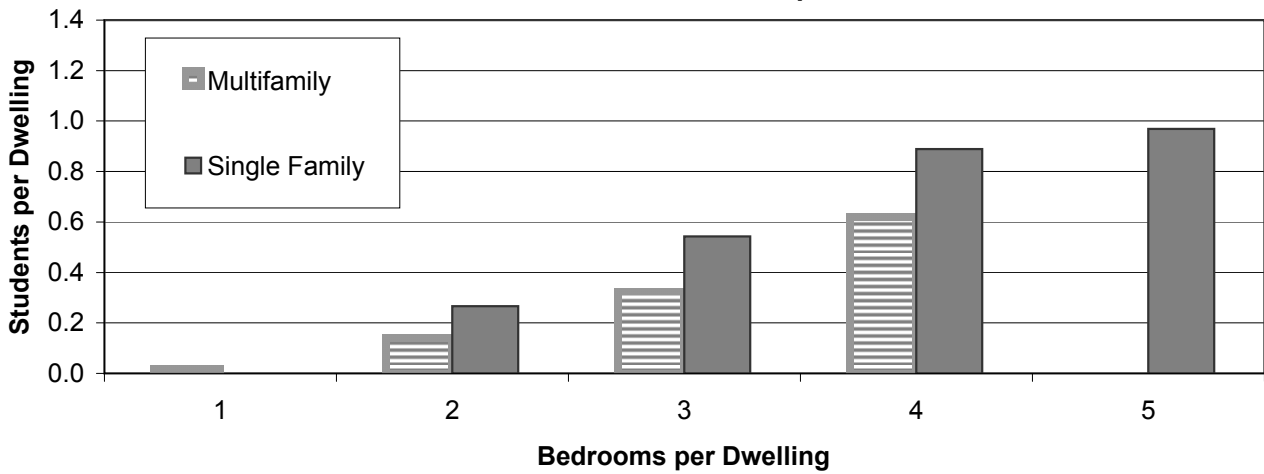
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attached: Charts 1, 2, and 3 on one sheet

**Chart 1: Bedrooms and Public School Students  
Patriot Hill and Patriot Ridge**



**Chart 2: Bedrooms and Public School Students  
All Bernards Township**



**Chart 3: Bedrooms and Public School Students  
"Old" is 1994 or earlier; "New" is 1995 or later**

