

THE TOWN OF PHILIPSTOWN

BUILD-OUT ANALYSIS

ESTIMATING THE IMPACTS
OF RESIDENTIAL GROWTH

PREPARED FOR:

HUDSON HIGHLANDS LAND TRUST, INC.

BY

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INTRODUCTION

The Philipstown Comprehensive Plan was adopted in March 2006. With work pending to revise and update Philipstown's land use control regulations to meet the needs of the Town for the foreseeable future, current and accurate information regarding the potential for new residential development, and where it will occur, is now a necessity. When prepared in a comprehensive and objective manner, this information will serve to guide Town leaders in the development of responsive regulations to achieve the balanced goals called for in the new Plan.

The Hudson Highlands Land Trust, in financial partnership with the Town, commissioned the planning firm GREENPLAN, Inc. to undertake a complete and impartial residential build-out analysis of Philipstown, examining all undeveloped and underdeveloped lands outside of the incorporated villages of Cold Spring and Nelsonville. By applying the current Zoning to such lands, the analysis identifies probable outcomes for residential development in the absence of changes to the existing Zoning. With the results of the analysis available to decision-makers, they can review in an objective manner residential development outcomes that may be undesirable for the Town. Conversely, the build-out analysis results can be used to support residential development in a manner consistent with the updated Comprehensive Plan.

A build-out analysis is a planning exercise that "estimate[s] the impact of cumulative growth upon a town's land areas once all the developable land has been consumed and converted to uses permitted under the current regulatory framework."¹ Build-out examines probable future development intensities and patterns. There are two products of a build-out analysis. One is a map showing development patterns and the other is a table that quantifies the number of new dwelling units, residents, miles of new roads and other probable impacts of such development. The build-out analysis helps visualize the patterns of growth and is a "test" to see if the goals of the community's comprehensive plan are working. For example, if a community has set a goal of preserving open space but the zoning regulations allow for development of residential uses across all lands (including farmland and other open space), then open space lands are likely to disappear and the goal will not be attained, unless changes are made.

Build-out analysis can assist residents and decision-makers in understanding, ahead of time, the impacts development may have on the community. It identifies public services that need to be built, expanded or improved to accommodate growth and can help town officials

¹ *Manual of Build-out Analysis*. (1990) Center for Rural Massachusetts.

estimate the costs and revenues required by local government. It also helps to identify resource constraints (like fiscal or environmental) that may impede new development. Build-out analysis helps in the selection of policy alternatives to accommodate or mitigate new development that will occur. It can also foster identification of appropriate land uses and the density of land use in the community.

Build-out analysis is designed to assess development taking place at one point in time and space. It is not a prediction, *per se*, of what will occur at any particular time. For policy-makers however, it can show the consequences of taking no action to change the town's land use controls.

BUILD-OUT ANALYSIS ASSUMPTIONS

In this analysis of Philipstown, the focus of the build-out is on residential development. The Town currently has five residential zoning districts: the R-10, R-20, R-40, R-80 and R-120 which approximates a minimum lot size (density) of one-quarter (1/4) acre, one-half (1/2) acre, one (1) acre, two (2) acres and three (3) acres respectively. One of the features of build-out analysis is an examination of the number of new dwellings that can be developed in the Town, the miles of new roads that will be built as a result of the development and the municipal burdens associated with snowplowing and maintaining the new roads. However, Philipstown has experienced an increased trend in the use of Open Development Areas (ODA). With ODA, a subdivider, rather than constructing and dedicating new roads to the Town, opts to construct a private road to be owned and maintained by the landowners served by the road. In Philipstown, a maximum of 6 building lots on a private road can be achieved. On larger parcels, which could result in more than six (6) lots under the bulk regulations, the developer is forfeiting the potential for additional lots.

The build-out analysis assumptions are more fully explained in *Appendix A* to this Report. The following tables compiled from the Town of Philipstown Planning Board illustrate the increased use of ODA's. The trend in the size of newly created lots is well in excess of the Zoning regulations. These ODA regulations are allowed as part of the Town's Subdivision Regulations.

Year	Subdivision Name	Zoning District	Total Acreage	Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Average Lot Size (Acres)
2004	Jacobson	R-80	28.38	11.50	9.40	7.40			9.46
2004	Drumme	R-40/80	33.90	5.80	11.40	10.50	6.13		8.48
2004	Giachinta	I	28.47	8.60	7.40	2.86	5.11	2.78	5.69
2004	Indian Brook	R-80	31.01	5.20	7.40	6.30	6.80	5.30	6.20
AVERAGE LOT SIZE FOR THE 17 LOTS CREATED									7.05

Compiled by the Hudson Highland Land Trust.

Table 2 Recent Minor Subdivisions							
Year	Subdivision Name	Zoning District	Total Acreage	Lot 1	Lot 2	Lot 3	Average Lot Size (Acres)
2005	Small	R-40	13.59	7.73	5.87		6.80
2005	Hine	R-80	6.83	3.10	3.70		3.40
2005	Lippe	R-40/120	14.07	9.40	5.00		7.20
2005	Marangoni	R-40	15.58	11.20	4.30		7.75
2005	Ely	R-40	9.07	2.80	1.70	4.40	2.97
2004	Allen	R-120	5.00	2.75	2.79		2.77
2004	Tomann	R-80	10.23	3.40	6.80		5.10
2003	Svastano	R-40	8.74	4.03	4.70		4.37
2003	Villetto	I	7.97	3.80	4.20		4.00
2002	Pidilla	R-40/80	7.00	3.47	3.50		3.49
2001	Vahos	R-40	3.00	1.50	1.50		1.50
AVERAGE LOT SIZE FOR THE 23 PARCELS CREATED							4.42

Compiled by the Hudson Highland Land Trust.

As discussed above, a build-out analysis cannot take into account every development scenario which may ultimately result in the Town. **This build-out analysis assumes future development will be served by private (ODA) roads and not by standard subdivisions served by public roads.** The build-out analysis also does not account for any multi-family development, which can occur in any zoning district by the conversion of a dwelling into two or more units upon approval of a Special Use Permit issued by the Planning Board or development in Planned Development Districts. Therefore, it is important for the reader to understand that this analysis is based upon a conservative approach which recognizes the unique pattern of development occurring in Philipstown, largely due to natural features like topography. More intensive development practices, not currently being experienced in Philipstown, but seen elsewhere in the Hudson Valley region, could actually occur in Philipstown based upon its current land use controls and this may result in much greater development than the assumptions imply.

As shown in Table 1, the average lot size in recent subdivisions served by private (ODA) roads is 7.05 acres while the average lot size in recent minor subdivisions is 4.42 acres. The total land area in the Town is approximately 29,875 acres. Table 3 shows the distribution of acreage within the respective residential zoning districts. As shown in Table 3, a majority of the land in Philipstown is devoted to residential use and the predominant allowable density is one dwelling unit per two (2) acres of land.

Table 3	
District	Acreage
R-10	195.88
R-20	105.49
R-40	3,685.75
R-80	15,850.35
R-120	7,022.75
Total	26,860.22

Summary of acres per Zoning District according to the Putnam County 2003-2004 Real Property Tax Data

The analysis involved separating the residential tax parcels into lands that have already been developed, lands that have been encumbered with conservation easements or are otherwise protected from development, lands that are undeveloped (vacant) and lands that can be considered underdeveloped² and are likely to be subject to further subdivision. Table 4 highlights the acreage identified for each of these categories while Figure 1 in *Appendix C* shows the distribution of parcels within the Town.

Table 4	
Category	Acreage
Developed	3,829.63
Underdeveloped	4,117.66
Undeveloped	5,226.62
Conserved	2,860.00
Other	13,841.09
Total	29,875.00

*Distribution of acreage for the build-out. Please note the **Other** category includes parcels in the B1, B2 and I zoning districts; lands devoted to public use and the No Data parcels.*

² Underdeveloped lands are those parcels containing one residential unit and are of a size which can be further subdivided in accordance with the zoning district bulk regulations.

BUILD-OUT FINDINGS

The build-out analysis has found that a total of 1,780 additional single family dwelling units could be constructed under current Zoning regulations and based upon the assumptions identified herein. According to the 2000 US Census, the population in Philipstown at that time was 9,422 persons and there were 3,983 existing housing units. The results of the build-out indicate the Town's population could increase by 4,557, raising the existing population 48% to a total of 13,979 persons and increasing the number of housing units by 45%. This is likely to cause an additional 3,560 vehicles on the roadways making 16,999 trips per day. There would be an additional 743 acres of impervious surface along with 676,400 gallons of water needed per day and an equal amount of sewage generated and disposed of in the same place where water is derived (assuming all wells and septic systems). Finally, the Town would need to add five (5) new police officers and five (5) new firefighters. Table 5 below summarizes these findings and Figures 6 and 7 provide the conceptual spatial distribution of the existing and potential units.

Table 5 Summary of Build-Out Impacts		
	<u>Potential Impacts</u>	<u>Impact Factor</u>
# of Developable Acres (DA)	7,426	
# of Existing Units	3,983	
# of New Units	1,780	
Additional Residents	4,557	2.56/unit
Additional School Age Children³	1,507	.845/unit
Acres of Impervious Surface	743	10% * DA
Miles of New Private Roads	34	100 feet/unit
Additional Vehicles on Roads	3,560	2/unit
Additional Vehicle Trips/Day	16,999	9.55/unit
Additional Police Officers	5	1/1000 new population
Additional Fire Fighters	5	1/1000 new population
Additional Water Consumed (gpd)	676,400	380 gpd/unit
Additional Sewage Generated (gpd)	676,400	380 gpd/unit

Please see Appendix A for sources of impact factors.

³ This figure was calculated based upon the number of units within each school district and due to rounding of the numbers is slightly higher than it would be if you calculated the figure based simply upon the total potential additional units noted in Table 5.

To measure the potential fiscal impacts of the build-out analysis, an examination of the impact on school districts was undertaken since the effects of school-age children generation are likely to be the greatest burden on taxpayers in the community. There are four districts serving residents of the Town of Philipstown: Haldane Central, Garrison Union Free, Lakeland Central and Wappingers Central. Please see Figure 5 in *Appendix A* for a map of the school district boundaries. The fiscal analysis assumes the school per-pupil operating costs and tax rate remains the same throughout the build-out. The analysis is based on the 2004-05 School Year budget.

For the four school districts, fiscal and enrollment data was obtained from state and local sources. Geographically, Philipstown is primarily served by the Haldane Central and Garrison Union Free School districts as shown in Figure 5. While there a small percentage of students from the Garrison District who attend a school in Haldane, this analysis assumes all children in those two districts are located within the respective district boundaries. Table 6 below describes the budget and enrollment information for the four districts.

District	Total # of Students	# from Philipstown	Total Budget	Cost/Student
Haldane Central	853	853	\$14,566,935	\$17,077
Garrison Union Free	382	382	7,505,970	19,649
Lakeland Central	6,867	387	106,928,849	15,571
Wappingers Central	12,312	Unknown	140,252,663	11,392

Source: Data was obtained from the NY State Department of Education and from the respective school districts. The Wappingers Central School District does not track students by locality.

To account for the "real" cost to the taxpayers, data regarding State Aid to the school districts were obtained as well. State Aid varies from district to district and effectively lowers the cost of educating students for the taxpayers. Table 7 shows State Aid amounts for the districts and recalculates the cost/student figure.

District	State Aid	Cost/Student
Haldane Central	\$1,948,164	\$ 14,793
Garrison Union Free	688,948	17,846
Lakeland Central	28,965,269	11,353
Wappingers Central	38,994,904	8,224

Source: Data was obtained from the NY State Department of Education

As can be seen from Table 7, the Garrison Union Free District is the most costly in terms of the cost to serve a student and this District receives the least State Aid. Consequently, residential growth⁴ in this district carries a heavier tax burden than the other districts. The results of the build-out estimate 609 new school children in the Garrison District - ***more than a doubling of the existing district population*** – which translates into more than a **\$7 million deficit**.

Haldane Central, the other principal district serving a large area in the Town, will also nearly double its existing population under build-out as shown in Table 8. Although the deficit in Haldane is not as dramatic as Garrison's, build-out within this District will ultimately cost the tax payers several million dollars more to accommodate future growth. Of the four school districts, only Lakeland Central shows a relatively minor positive fiscal impact from future residential growth. Overall, the net fiscal impact for the Town's four school districts is a **deficit of more than \$11 million**, primarily focused on the two largest districts geographically, as shown in Table 8.

Table 8 Summary of Fiscal Impact on School Districts						
District	Existing Children	Total 2004-05 Budget	Estimated New Children	Total Cost	Total Revenues	Net Impact
Haldane	853	\$14,566,935	670	\$9,911,579	\$6,089,492	(\$3,822,087)
Garrison	382	7,505,970	609	10,867,975	3,421,838	(7,446,137)
Lakeland	6,867	106,928,849	212	2,406,914	2,435,533	28,619
Wappingers	12,312	140,252,663	16	131,589	109,450	(22,139)
Total	20,326	N/A	1,507	\$23,318,057	\$12,056,313	(\$11,261,744)

*Summary of fiscal impacts of new residential growth on school districts serving the Town of Philipstown.
For full details of this analysis, please see Appendix B.*

In general terms, the fiscal analysis can tell us how projected growth is likely to affect the local school district's ability to sustain current levels of revenues (taxes) and spending. It is important to note that it cannot tell us precisely what future taxes and spending will occur. Furthermore, capacity levels in the districts have not been evaluated. Therefore, if a district is on the borderline of needing a new school, the fiscal impacts of additional capital expenditures have been greatly underestimated in this analysis.

⁴ This analysis does not factor in the revenues from "non children producing" land uses including the Town's existing and future commercial and industrial tax base. The build-out simply analyzes the ability for new residential growth to support itself in terms of anticipated costs incurred and revenues generated.

CONCLUSIONS

It is important to remind the reader that a build-out analysis is a policy-making tool, not a crystal ball into the future. It has been undertaken to further the community's awareness of existing growth patterns and the potential for future growth that will affect the everyday life of a Philipstown resident. People choose to make an investment in the community with the purchase of their home and often cite reasons such as the quality of life, scenic views, recreational opportunities, quality of the schools, open spaces and proximity to employment. Outdated zoning regulations can work against those factors that "pull" new residents into a community by promoting wasteful or poorly planned development.

This build-out analysis has shown that current zoning practices will potentially require greater expenditures from Philipstown taxpayers to support the additional services and school costs of probable growth. It also shows that traffic will increase on the roadways in the Town, and there will be an increase in impervious surfaces, which is a major cause of pollution of New York's waterways. What the build-out cannot quantify are the often intangible assets that make a community attractive and contribute to its quality of life. These assets include the predominance of a rural landscape, scenic views, forested areas, wetlands and other water features, and a walkable traditional neighborhood area. Attractive and desirable communities in the 21st century will adopt a smart growth approach to planning and will take appropriate measures to preserve residents' quality of life, thereby fostering long-term prosperity.

A divergent coalition of 32 organizations called the Smart Growth Network has come together to support smart growth by adopting a set of ten principles. The coalition represents the interests of organizations as diverse as the National Association of Home Builders, American Planning Association, Institute of Transportation Engineers, National Association of Realtors, National Wildlife Federation, National Trust for Historic Preservation and the Natural Resources Defense Council. Even government and government organizations like the US Environmental Protection Agency, National Oceanic and Atmospheric Administration, the State of Maryland, the National Association of Counties, United States Conference of Mayors and Local Government Commission have agreed upon and adopted the smart growth principles.

The Smart Growth Network has devised ten principles that articulate the goals of smart growth. The principles help communities recognize and value smart growth and seek ways to implement it.

Smart Growth Principles

- 1) Mix land uses
- 2) Take advantage of compact building design
- 3) Create a range of housing opportunities and choices
- 4) Create walkable neighborhoods
- 5) Foster distinctive, attractive communities with a strong sense of place
- 6) Preserve open space, farmland, natural beauty and critical environmental areas

- 7) Strengthen and direct development towards existing communities
- 8) Provide a variety of transportation choices
- 9) Make development decisions predictable, fair and cost effective
- 10) Encourage community and stakeholder collaboration in development decisions

The good news is that Philipstown is in control of its future destiny and smart growth planning techniques are available for the community to consider. Additionally, "home rule" authority provided by New York State law enables the Town a great deal of latitude in considering options for future growth and development. The planning process the community is currently engaged in can have lasting beneficial impacts for generations to come by embracing smart growth techniques designed to offer residents choices. The outcomes of smart growth include protecting the unique character and natural features in the landscape while providing for a wider range of living options with improved housing, schools, parks and services. It is up to the Town decision makers, in collaboration with Town residents in an open planning process, to make the best choices for Philipstown's future.

APPENDIX A: BUILD-OUT ASSUMPTIONS

Philipstown consists of a varied topography which includes many slopes greater than 15%. As a result of this and the predominance of individual wells and septic systems serving residences, Philipstown faces limitations on the ability of the land to be developed in order to meet Putnam County Department of Health Standards. Additionally, recent subdivision activity shows an increased trend in ODA subdivisions as noted above. Using this information as a basis, the following assumptions were applied to the buildout analysis:

1. Planned Developments Districts (PDD), which is currently allowed by Zoning, was not considered. Nor was the development of and commercially zoned parcels for the analysis. It should be noted the exclusion of PDDs may greatly underestimate the number of future housing units. For example, recent approval of the 78 unit Quarry Pond PDD is not accounted for in this study.
2. All new development will be single-family homes on lots subdivided in accordance with the Philipstown Zoning Law.
3. Parcels which have a conservation easement and permit building envelope(s) have been identified including the number of additional building lots. It was assumed these lots will eventually be developed so the numbers were represented in the calculations of total potential units.
4. All of the remaining vacant and underdeveloped land, with the exception of those parcels less than two acres in size, were evaluated as an ODA subdivision based upon the standards in the Town's Subdivision Regulations which stipulate:
 - a. Not more than 4 building lots, including the lot for which the permit is sought as well as any other lot which has legal access to the right-of-way or easement or in fact uses the right-of-way or easement for access referenced in § 112 56A.(5). It was assumed that the additional two lots, for a total of six, would have access directly from an existing public highway.
 - b. Lots must be a minimum of 120,000 square feet (approximately 3 acres).
5. Based on the ODA assumption in item 4, a portion of the remaining vacant land, regardless of the zoning district in which it lies (with the exception noted above), has been evaluated to determine the maximum number of potential new lots based upon parent parcel size. The following table describes this assumption:

Size of Parcel	Maximum # of New Lots
2 acres to 14 acres	2
15 acres to 42 acres	4

6. Based on the ODA assumption in item 4, a portion of the remaining underdeveloped land, regardless of the zoning district in which it lies (with the exception noted above), has been evaluated to determine the maximum number of potential new lots based upon parent parcel size. The following table describes this assumption:

Size of Parcel	Maximum # of New Lots
2 acres to 14 acres	1
15 acres to 42 acres	3

7. For vacant parcels in the R-40 zoning district and those less than 2 acres in size, DEC wetlands along with their regulated buffers and wetlands which fall under the jurisdiction of the Army Corps of Engineers (ACOE) have been deducted from the total amount of acres in this category. No other environmental constraints will be deducted to ensure the maximum number of lots is considered. It will be assumed there will be one lot per 1 ½ acre for the remaining land.
8. For underdeveloped parcels ranging from 1.5 to 2 acres in size, DEC wetlands along with their regulated buffers and wetlands which fall under the jurisdiction of the Army Corps of Engineers (ACOE) has been deducted from the total amount of acres in this category. No other environmental constraints were deducted to ensure the maximum number of lots is considered. It was assumed there will be one lot per 1 ½ acres for the remaining land.
9. For parcels greater than 42 acres, the following assumptions will be applied:
- a. Environmental constraints⁵, as noted below have been deducted from the total amount of vacant land to determine a subtotal of net developable area:
 - i. DEC Regulated Wetlands and their associated buffers – *See Figure 2 in Appendix C - Maps*
 - ii. Streams and rivers - *See Figure 2 in Appendix C - Maps*
 - iii. ACOE Wetlands - *See Figure 2 in Appendix C - Maps*
 - iv. All hydric soils - *See Figure 3 in Appendix C - Maps*
 - v. All slopes greater than 35% - *See Figure 4 in Appendix C - Maps*
 - vi. 50% of the slopes between 25% and 34% - *See Figure 4 in Appendix C - Maps*
 - b. The subtotal of net developable area will be further reduced by 20% to account for necessary infrastructure (private roads and drainage) and for inefficiencies in lot layout (irregular lot configurations). Generally inefficiencies in site design allow for 70% to 80% of the total site to be developed.
 - c. The number of lots has been determined by dividing the net developable area (acres) by an average lot size of 5 acres. An average lot of 7 acres was determined by a review of past subdivisions in the Town as illustrated in Table 1 of the Report above; however, those numbers reflect a full Planning Board review where environmental constraints would be taken into consideration. Therefore it is appropriate to use a smaller average lot size in this study to maintain a consistent approach to potential future development.

⁵ Environmental constraints will be determined on a net basis whereby overlapping constraints will only not be accounted twice in the calculation.

- d. For the underdeveloped parcels in this category, the minimum lot size for the parcel's respective zoning district has been deducted in addition to environmental constraints. The number of lots has been determined by dividing the net developable area (acres) by an average lot size of 5 acres.

BUILD-OUT METHODOLOGY

The build-out analysis was aided by a Geographic Information System (GIS) consisting of relevant geospatial data including tax parcels, DEC wetlands, ACOE wetlands, waterbodies, slopes, soils and FEMA floodplains. The analysis involved the following process:

1. Tax parcel data was categorized to show vacant lots less than 2 acres, lots 2 acres to 14 acres in size, lots 15 acres to 42 acres and those greater than 42 acres. Underdeveloped lots were categorized as follows: lots ranging from 1.5 to 1.99 acres, lots 2 acres to 14 acres in size, lots 15 acres to 42 acres and those greater than 42 acres.
2. For vacant and underdeveloped lots less than 2 acres, the total area of DEC wetlands and their regulated 100 foot buffer and ACOE wetlands were calculated.
3. For vacant and underdeveloped lots greater than 42 acres, the total area of the following environmental constraints was calculated:
 - a. DEC Regulated Wetlands and their associated 100 foot buffers
 - b. Streams, rivers and their associated 100 foot buffers
 - c. ACOE Wetlands
 - d. All hydric soils
 - e. All slopes greater than 35%
 - f. 50% of the slopes between 25% and 34%

4. Using the following tables as a guide, the total number of potential new lots was determined:

Vacant Parcels:	# of Parcels	Acres	New Lots/ Parent Parcel	Potential New Lots
<u>2 to 14 acres:</u>				
Haldane SD	129	728.08	2	258
Garrison SD	114	566.26	2	228
Lakeland SD	12	53.59	2	24
Wappingers SD	3	23.96	2	6
Subtotal	258	1371.89		516
<u>15 to 42 acres:</u>				
Haldane SD	19	412.16	4	76
Garrison SD	13	293.11	4	52
Lakeland SD	9	192.73	4	36
Wappingers SD	2	56.84	4	8
Subtotal	43	954.84		172
Underdeveloped Parcels:				
<u>2 to 14 acres:</u>				
Haldane SD	181	999.88	1	181
Garrison SD	202	1225.51	1	202
Lakeland SD	24	161.79	1	24
Wappingers SD	1	5.10	1	1
Subtotal	408	2392.28		408
<u>15 to 42 acres:</u>				
Haldane SD	22	502.71	3	66
Garrison SD	23	531.94	3	69
Lakeland SD	2	47.30	3	6
Wappingers SD	1	19.18	3	3
Subtotal	48	1101.13		144
Total	757	5820.14		1240

Vacant Parcels	Total Acreage (a)	Environmental Constraints (b)	Subtotal Net Buildable Land (c) = a-b	Lot & Infrastructure Inefficiency (20%) (d) = (c)x.2	Net Buildable Land (e) = (c) - (d)	New lot Assumptions (f)	Potential New Lots (g) = (d)/(f)
<u>< 2 acres⁶</u>							
Haldane SD	111.14	3.94	107.20	N/A	107.20	1 lot/1.5 acre	72
Garrison SD	91.95	4.01	87.94	N/A	87.94	1 lot/1.5 acre	59
Lakeland SD	215.04	4.53	210.51	N/A	210.51	1 lot/1.5 acre	140
Wappingers SD				N/A		1 lot/1.5 acre	0
Subtotal	418.13	12.48	405.65		405.65		271
<u>> 42 acres</u>							
Haldane SD	1528.49	800.96	727.54	145.51	582.03	5 acres/lot	116
Garrison SD	787.84	396.98	390.86	78.17	312.69	5 acres/lot	63
Lakeland SD	165.43	86.59	78.84	15.77	63.07	5 acres/lot	13
Wappingers SD	0.00	0.00	0.00	0.00	0.00	5 acres/lot	0.00
Subtotal	2481.76	1248.53	1197.24	239.45	957.79		192
Total	2899.89	1261.01	1602.89	239.45	1363.24		463

⁶ Lot inefficiencies have not been deducted from this category of parcels because the assumption of 1.5 acres per new lot is believed to encompass these inefficiencies on the smaller lots.

Under-Developed Parcels	Total Acreage (a)	Environmental Constraints (b)	Subtotal Net Buildable Land (c) = a-b	Lot & Infrastructure Inefficiency (20%) (d) = (c)x.2	Net Buildable Land (e) = (c)-(d)	New lot assumptions (f)	Potential New Lots (g) = (d)/(f)
<u>1.5 < 2 acres⁷</u>							
Haldane SD	0.00	0.00	0.00	N/A	0.00	1 lot/1.5 acre	0
Garrison SD	0.00	0.00	0.00	N/A	0.00	1 lot/1.5 acre	0
Lakeland SD	5.29	.67	3.70	N/A	3.70	1 lot/1.5 acre	3
Wappingers SD	0.00	0.00	0.00	N/A	0.00	1 lot/1.5 acre	0
Subtotal	5.29	.67	3.70		3.70		3
<u>> 42 acres⁸</u>							
Haldane SD	234.04	103.57	122.48	24.50	97.98	5 acres/lot	20
Garrison SD	313.13	153.07	150.07	30.01	120.05	5 acres/lot	24
Lakeland SD	69.89	42.49	25.40	5.08	20.32	5 acres/lot	4
Wappingers SD	0.00	0.00	0.00	0.00	0.00	5 acres/lot	0
Subtotal	617.06	299.75	297.31	59.46	237.85		48
Total	622.35	300.42	301.01	59.46	241.55		51

Reserved Home Sites on Properties with Conservation Easements	
Haldane SD	3
Garrison SD	23
Total	26

⁷ The minimum lot area according the parcels zoning district was also subtracted to obtain the subtotal of net developable land to account for one existing residence on each lot. A total of .92 acres has been deducted.

⁸ The minimum lot area according the parcels zoning district was also subtracted to obtain the subtotal of net developable land to account for one existing residence on each lot. A total of 20 acres has been deducted.

5. Based upon the number of potential new lots, the following impact areas was analyzed:
 - a. Total new residents are based upon the 2000 US Census median number of persons per household (2.56) for Philipstown.
 - b. Total new school age children is .845/new unit according to *The Practioners Guide to Fiscal Impact* multiplier for blended bedrooms
 - c. To calculate acres of impervious surface, an estimate based upon the maximum lot coverage (10%) for the R-40, R-80 and R-120 zoning district was used. This was multiplied by the total of developable land.
 - d. Miles of new private roads was calculated based upon an average lot frontage of 100 feet due to the varying minimum lot frontages permitted in the Zoning for the residential district. These minimums range from 20 feet in the R-40, R-80 and R-120 to 100 feet in the R-20.
 - e. Additional vehicles on the roads were estimated at 2 per unit. According to the 2000 US Census, there was an average of 2 cars per household for owner occupied units.
 - f. Additional vehicle trips per day were estimated at 9.55 per unit based upon the Institute of Transportation Engineers Trip Generation Manual for single family homes.
 - g. New police officers and firefighters were conservatively estimated at 1 per 1000 new residents. The International Association of Fire Chiefs based upon a publication entitled *Impact of Growth* (1985) estimate 2 new police officers per 1,000 population and 1.65 per 1,000 population.
 - h. Additional water consumed (gallons per day or gpd) and additional sewage consumed (gpd) was based upon the NYS DEC *Design Standards for Wastewater Treatment Works* of 380 gallons for a 4 bedroom home (475-20% for water saving features).

APPENDIX B – SCHOOL DISTRICTS FISCAL IMPACT ANALYSIS

Step 1 – Determine existing school population and cost/student with and without State Aid:

<i>For the 2004-2005 School Year</i>				
<i>District</i>	<i>Total # of Students</i>	<i># from Philipstown</i>	<i>Total Budget</i>	<i>Cost/Student</i>
Haldane Central Garrison Union Free	853	853	\$14,566,935	\$17,077
Lakeland Central	6,867	387	106,928,849	15,571
Wappingers Central	12,312	n/a	\$140,252,663	\$11,392

Table 1: Data was obtained from the State Department of Education and from the respective districts. Please note the Wappingers School District does not track students by locality.

<i>For the 2004-2005 School Year</i>		
<i>District</i>	<i>State Aid</i>	<i>Cost/Student</i>
Haldane Central Garrison Union Free	1,948,164	\$14,793
Lakeland Central Wappingers Central	28,965,269	11,353
	38,994,904	8,224

Table 2: Cost per student is calculated by deducting total State Aid from the yearly budget and dividing by the total number of students.

Step 2 – Estimate costs generated by the build-out figures for each district:

<i>District</i>	<i>New Children</i>	<i>Cost/Child</i>	<i>Estimated Cost</i>
Haldane	670	\$14,793	\$9,911,579
Garrison	609	17,486	10,867,975
Lakeland	212	11,353	2,406,914
Wappingers	16	8,224	131,589
Total	1,507		\$26,571,056

Table 3: Cost calculated based upon the number of new students and Cost/Child including State Aid.

Step 3 – Estimate revenues generated by the build-out:

District	# of Units	Estimated Value	Adj for Equalization Rate (51.5%)	Tax Rate Per \$1,000	Estimated Revenues
Haldane	792	\$461,412,864	\$237,627,625	25.63	\$6,089,492
Garrison	720	419,466,240	216,025,114	15.84	3,421,838
Lakeland	250	145,648,000	75,008,720	32.47	2,435,533
Wappingers	18	10,486,656	5,400,628	20.27	109,450
Total	1,780	\$1,037,013,760	\$534,062,086		\$12,056,313

Table 4: Revenues are based upon the average sales price (\$582,592) of a home in Philipstown and the current equalization rate (51.5%)

Step 4 – Evaluate fiscal impact for each district:

District	Existing Children	Total 2004-05 Budget	Estimated New Children	Total Cost	Total Revenues	Net Impact
Haldane	853	\$14,566,935	670	\$9,911,579	\$6,089,492	(\$3,822,087)
Garrison	382	7,505,970	609	10,867,975	3,421,838	(7,446,137)
Lakeland	6,867	106,928,849	212	2,406,914	2,435,533	28,619
Wappingers	12,312	140,252,663	16	131,589	109,450	(22,139)
Total	20,326	N/A	1,507	\$26,571,056	\$12,056,313	(11,261,744)

Table 5: A comparison of revenues to expenses shows a deficit for three of the four school districts

APPENDIX C - MAPS
