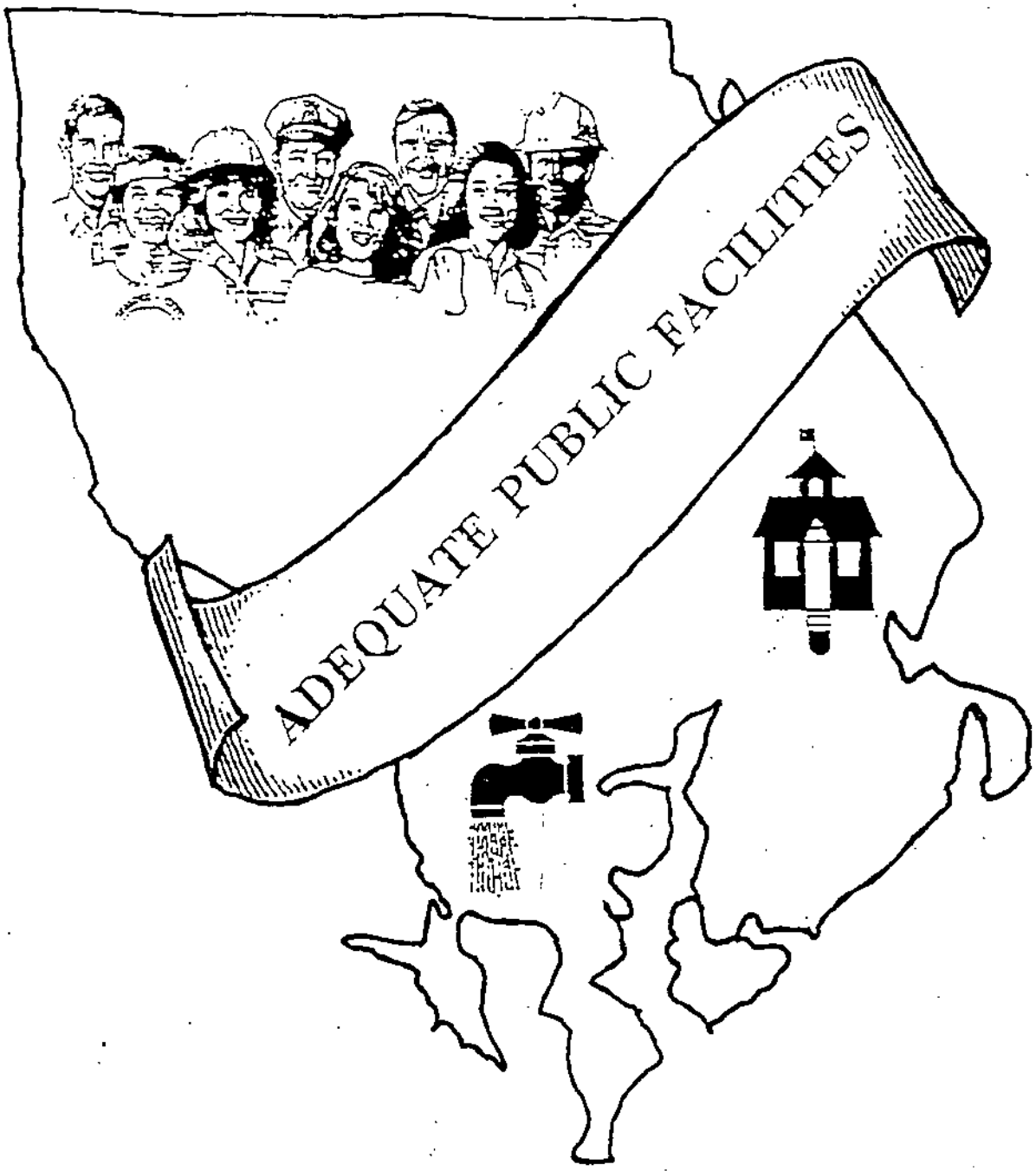
HARFORD COUNTY
1997 ANNUAL GROWTH REPORT



Prepared by the Department of Planning and Zoning, May 1998.

The 1997 Annual Growth Report

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EXECUTIVE SUMMARY

In accordance with the Harford County Adequate Public Facilities provisions (Section 267-104) of the Harford County Code, the Harford County Annual Growth Report must be updated annually to identify any facilities that are below the County's adopted minimum standards. This year's Annual Growth Report includes information and analysis regarding Public Schools, Water and Sewerage System, and Road Intersections.

Harford County Public Schools:

The adopted adequacy standards for the Public School system are:

Elementary Schools - 120 % of local rated capacity within 2 years.
Secondary Schools - 120 % of local rated capacity within 3 years.

Preliminary Plans for new developments cannot be approved in elementary school districts where the full- time enrollment currently exceeds or is projected to exceed 120 percent of the capacity within two years. Twenty-eight of the 31 elementary schools meet this standard. The projected enrollment for the Abingdon Elementary School during the 1998/99 school year is 784 for a utilization rate of 131 percent. Planning funds have been approved for an addition to the Abingdon Elementary school facility. However, no construction funds have been approved at this time. As occurred during the July 1, 1997 to June 30, 1998, period; any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 1998.

The projected enrollment for the Church Creek Elementary School during the 1998/99 school year is 751 for a utilization rate of 125 percent. County planning funds have been approved for an addition to Church Creek Elementary school facility. However, no construction funds have been approved at this time. Any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 1998.

The projected enrollment for the Magnolia Elementary School during the 1998/99 school year is 638 for a utilization rate of 122 percent. As of this date, no additional elementary schools facilities that would relieve this situation have received construction funding. Any preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available for the year beginning July 1, 1998.

Preliminary plans for new developments cannot be approved in secondary school districts where full-time enrollment currently exceeds or is projected to exceed 120 percent of the capacity within three years. Of the seventeen middle and high schools in Harford County, fifteen meet the adequacy standard.

The projected enrollment for Fallston Middle School in the 1998/99 school year is expected to be 1,182 students for a utilization rate of 131 percent. As occurred during the prior year, for the year beginning July 1, 1998; preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available.

The projected enrollment for C.M. Wright High School in the 2000/01 school year is expected to be 1,901 for a utilization rate of 123 percent. For the year beginning July 1, 1998, preliminary plans for new developments within this attendance area will not be approved but will be reviewed and placed on a waiting list until capacity is available.

Harford County Water and Sewerage System:

Based on the Adequate Public Facilities Ordinance and the Harford County Water and Sewer Design Guidelines, preliminary plan approvals, Public Works Utility Agreements, and building permits in areas served by public water and sewer systems can be approved only where adequate capacity exists in the water and wastewater treatment facilities and in distribution and collection lines serving the area.

Harford County's sewerage system's average flow to the Sod Run Wastewater Treatment Plant is 9.70 Million Gallons per Day (MGD) while the design capacity is 12.0 MGD for a total Average Reserve of 2.3 MGD (as of December, 1997). The County Water system's current average daily usage is 9.6 MGD with a peak day consumption of 14.3 MGD. The Water Treatment capacity is 19.1 MGD, leaving a total reserve of 9.5 MGD (as of December 1997). These figures refer only to a County-wide total capacity figure.

The determination of water or sewerage capacity in a specific area of the County can be found in the "Water and Sewer 1997 Adequate Public Facilities Report " with appropriate guidance from the Department of Public Works. A determination of adequacy is made prior to preliminary plan approval, site plan approval, public works utility agreement execution, and building permit approval.

The water system is evaluated for adequacy for providing flows during the maximum day demand with the minimum required pressures for fire flows. Water booster stations and/or transmission lines, service mains, storage tanks, and water treatment plants are evaluated. Areas within the Harford County Development Envelope that exist at the highest elevations of the water pressure zones are evaluated for adequacy on a case-by-case analysis. The anticipated growth within the County is accommodated through a combination of developer funded projects and the County capital improvement program.

The sewer system is evaluated to accommodate expected peak flows through collectors, interceptors, pump stations, force mains, and wastewater treatment plants. Should a problem exist in a collector sewer, it is the developer(s) responsibility to resolve the inadequacy. Inadequacies at major pumping stations and wastewater treatment plants are resolved by programmed capital projects or by projects cooperatively supported by a group of developers.

Harford County Road System:

To determine existing service levels at intersections and the impact of additional traffic, a Traffic Impact Analysis (TIA) must be submitted for development that generate 249 trips per day at the time of preliminary/site plan review.

The adequacy standards for road intersections within the study area based on the property's location within or outside the Development Envelope and are defined as follows:

Inside the Development Envelopment: LOS D.
If existing LOS is E or F at an intersection within the Development Envelope, the developer must mitigate the development's new trips.

Outside the Development Envelope: LOS C.
If the existing LOS is D or lower, then the developer must mitigate the development's new trips.

A developer is required to provide improvements at intersections within the study area where trips generated by the development lowers the Level of Service (LOS) below the adopted standards. These improvements must bring the level of service to the adopted standard. If the TIA determines that the existing level of service does not meet the adopted standards, the subdivider must mitigate the impact of the trips generated from the development site. The study area is defined for areas within and outside the development envelope as:

***Inside the Development Envelope*:** The TIA study area shall include all the existing County and State roads from point of entrance of site to the second intersection of an arterial roadway or higher functional classification road, in all directions. Developments which generate 1,500 or more trips per day may be required to expand the study area.

Outside the Development Envelope: The TIA study area shall include all existing County and state roads from point of entrance to first intersection of a major collector or higher functional classification road, in all directions.

The determination of existing and projected Levels of Service is calculated in the Traffic Impact Analysis, which is performed by the developer and reviewed by the Departments of Planning and Zoning and Public Works.

In addition to the review of individual Traffic Impact Analyses, the Departments of Planning and Zoning and Public Works have studied a number of major roads and intersections to identify existing conditions. This list represents a cross section of key intersections located inside, outside, and on the fringes of the Development Envelope. There are three signalized and six unsignalized intersections with one or more movements operating at a LOS E or lower during peak hours.

The following intersections contain one or more movements that operate at an unacceptable LOS. The evaluation of the LOS is determined on performance of the intersection during one hour peak traffic periods in the a.m. and/or p.m. :

1. MD 924 & Plumtree Road
2. MD 152 & Singer Road
3. MD 24 & Forest Valley Road
4. MD 152 & Hanson Road
5. Interstate 95 & MD 24
6. MD 24 and Bel Air South Parkway
7. MD 24 and MD 924 (Tollgate)
8. MD 152 and U.S. 1
9. MD 543 & Wheel Road (This is now a signalized intersection.)

Developments that impact these intersections will be required to mitigate their impacts to the intersection.

INTRODUCTION

The Annual Growth Report is an on-going analysis of growth trends, facility capacity and service performance. This report was prepared by the Department of Planning and Zoning in coordination with the Department of Public Works - Water and Sewer and Engineering Divisions and the Board of Education. This report provides information on the present development activity as well as past trends and future projections for Harford County and the region.

The information in this report will be used by public officials, citizens and private developers for various purposes:

- to assess facility adequacy during the development review and approval process;
- to assess facility capacity in regard to zoning reclassification decisions;
- to support the evaluation of priority projects in the annual Capital Budget review;
- to identify critical deficiencies which require prompt attention by the County.

GROWTH TRENDS

Population Projection Methodology

Yearly estimates of population and households in Harford County for the Annual Growth Report are determined from the 1990 Census. This data is adjusted to reflect a number of variables including building permits, average household size and household vacancy rates. The 5 and 10 year projections are based on these estimates with a growth factor applied to determine the rate and quantity of growth in the County. This growth factor is based on the number of building permits anticipated to be issued each year. It is important to note that projections are based on past trends and land availability. The population projections for the five remaining jurisdictions in the Baltimore Region are based on an interpolation of the Baltimore Metropolitan Council's Round 5-A population forecast.

The 1990 Census information at the census block level is utilized for specific analysis of each facility regarding area maps and demographic information. Building permits are identified by facility areas, by subdivision name and/or address of each building permit for each year. This provides the needed information on growth trends by facility service area.

Table 1

Harford County - Baltimore Region
Residential Permit Activity
1993 - 1997

County	1993	1994	1995	1996	1997	Total	Percentage of Baltimore Region
Harford County	1,835	1,847	1,616	1,929	1,695	8,922	15.3%
Anne Arundel County	3,716	3,197	3,307	2,996	2,930	16,146	27.7%
Baltimore City	315	257	366	596	183	1,717	2.9%
Baltimore County	3,817	3,862	2,649	2,443	3,199	15,970	27.4%
Carroll County	1,389	1,436	1,299	1,162	778	6,064	10.4%
Howard County	1,869	2,032	1,860	1,706	2,027	9,494	16.3%
Total	**12,941**	**12,631**	**11,097**	**10,832**	**10,812**	**58,313**	**100.0%**

Source: Harford County Department of Planning and Zoning and Baltimore Metropolitan Council, March, 1998.

Table 2

Harford County - Baltimore Region
Population and Household Projections
1997 - 2007

County	1997 Population	1997 Households	2002 Population	2002 Households	2007 Population	2007 Households
Harford County	216,100	76,840	231,760	84,260	243,420	90,300
Anne Arundel County	467,900	168,060	488,520	181,060	505,080	191,940
Baltimore City	692,400	268,360	687,720	269,660	678,120	271,240
Baltimore County	720,720	293,400	733,380	304,600	743,960	313,180
Carroll County	143,720	50,360	154,020	55,260	167,100	60,880
Howard County	233,400	86,680	265,620	100,380	291,280	112,240
Total	**2,474,240**	**943,700**	**2,561,020**	**995,220**	**2,628,960**	**1,039,780**

Source: Harford County Department of Planning and Zoning and Baltimore Metropolitan Council, March, 1998.

Table 3
Harford County - Baltimore Region
Employment Projections
1997 - 2007

County	1997 Employment	2002 Employment	2007 Employment
Harford	83,980	91,920	98,280
Anne Arundel	264,700	280,500	295,000
Baltimore City	454,380	459,040	463,480
Baltimore County	417,400	436,020	452,680
Carroll	59,160	63,400	67,160
Howard	130,080	144,840	156,200
Total	**1,409,700**	**1,475,720**	**1,532,800**

Source: Harford County Department of Planning and Zoning and Baltimore Metropolitan Coucil, March, 1998.

Table 4

Harford County - Baltimore Region

Non - Residential Permit Activity

New Permits Valued $50,000 and Over

Permit Type	1993		1994		1995		1996		1997	
	Number Of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage	Number of Permits	Square Footage
Commercial	12	206,952	24	158,683	22	371,664	24	389,119	27	1,164,384
Industrial	8	77,523	9	43,491	6	328,786	12	237,575	14	513,977
Institutional	5	95,151	7	22,385	6	40,546	10	196,839	8	70,821
Utilities	0	0	6	27,626	1	80	3	9,038	2	2,828
Other	1	7,746	2	36,922	1	7,542	4	15,092	3	17,698
	26	**387,372**	**48**	**289,107**	**36**	**748,618**	**53**	**847,663**	**54**	**1,769,708**

Source: Baltimore Metropolitan Council, March, 1998.

Table 5

Harford County - Baltimore Region
Non - Residential Permit Activity
Additions, Alterations, and Repairs Valued $50,000 and Over

	1993		1994		1995		1996		1997	
Permit Type	**Number Of Permits**	**Square Footage**	**Number of Permits**	**Square Footage**	**Number of Permits**	**Square Footage**	**Number of Permits**	**Square Footage**	**Number of Permits**	**Square Footage**
Commercial	30	NA	31	NA	39	NA	61	NA	49	NA
Industrial	13	NA	7	NA	16	NA	14	NA	5	NA
Institutional	2	NA	10	NA	12	NA	12	NA	14	NA
Utilities	1	NA	2	NA	0	NA	2	NA	5	NA
Total	**46**		**50**		**67**		**89**		**73**	

NA: Data Not Available

Source: Baltimore Metropolitan Council, March, 1998.

PUBLIC SCHOOLS

Introduction

To assess current and future adequacy of the public school facilities; the capacities of the existing schools, the utilization of the schools, and future populations are analyzed. The data in this report regarding the public school system are aggregated by the elementary/middle/high school districts and include school enrollments, county-rated capacities for each school facility, utilization of each school facility, and 3 year projected school enrollments (Tables 6,7, and 8). In addition, development information such as building permits issued by dwelling type (Tables 9, 10, and 11) and population and households (Tables 12, 13, and 14) are included in this report. School maps and pupil yield factors by dwelling unit type are included in the Appendix.

Analysis

Each school facility has been analyzed in terms of past growth trends, current conditions and future enrollment projections. The information is based on factual data and is aggregated by the current school districts. The information in this report is based on factual data. Based on the Adequate Public Facilities provision of the County Code, the level of service standard for Public Schools are:

Elementary - 120% of local rated capacity within 2 years
Secondary - 120% of local rated capacity within 3 years

Of the thirty-one elementary schools, all but three meet this standard for the current school year and the next two years. The projected enrollment for the Abingdon Elementary School during the 1998/99 school year is 784 for a utilization rate of 131 percent. The projected enrollment for the Church Creek Elementary School during the 1998/99 school year is 751 with a utilization rate of 125 percent. The projected enrollment for the Magnolia Elementary School during the 1998/99 school year is 638 for a utilization rate of 122 percent (See Table 6). As of this date, planning funds have been approved for additions to Abingdon Elementary school. However, no construction funds have been approved at this time. Although county planning funds have been approved for an addition to the Church Creek Elementary school facility, it is still awaiting construction funding. Based on the level of service standards established by the Adequate Public Facilities provision of the County Code (Sec. 267-104), preliminary plans for residential subdivisions within these school districts will not be approved. All preliminary plans located in this district will be processed and placed on a waiting list until capacity is available.

Secondary Schools in Harford County include eight middle schools and nine high schools. Of the seventeen secondary schools, fifteen meet the adequacy standard. The projected enrollment for Fallston Middle School in the 1998/99 school year is expected to be 1,182 students with a utilization rate of 131 percent (See Table 7). The projected enrollment for C.M. Wright High

School for the 2000/01 school year is expected to be 1,901 students with a utilization rate of 123 percent (See Table 8). Effective July 1, 1998, any preliminary plans for new developments within these attendance areas will not be approved but will be reviewed and placed on a waiting list until capacity is available.

School Enrollment Projection Methodology

The methodology for projecting students utilizes historical data for live births and the number of children enrolled in public schools. Using these data, a series of ratios that reflect grade cohort survival are developed. These ratios include consideration of a number of factors:

1. Births in a given year which affect subsequent kindergarten and first grade enrollments.
2. Net migration of school age children.
3. Net transfer of children between public and private schools.
4. Nonpromotion of children to the next grade level.
5. Dropouts in the later years of secondary school.
6. Shifts between regular grade and upgraded groups other than special education.

This technique of establishing a ratio is used for each successive grade. For example, a ratio is developed between the number of children actually in the first grade in 1985 and the number in the second grade the following year. The ratio, therefore, represents the number of first graders who advance to the second grade. If significant variations exist (such as a rapid increase in home building), then factors such as pupil yields for subdivision activity and development trends must be measured.

In order to ensure accurate projections, development monitoring is a key activity because housing expansion periods have a direct impact on school enrollments. A primary means of calculating projected student enrollment due to a housing expansion period are by using pupil yield factors for new developments.

Pupil yield factors are determined by researching the number of students from a particular community/subdivision that are actually attending their home school. By dividing the number of students accounted for by the number of dwelling units, a pupil generation factor is determined. It is important to note that different pupil yield factors are generated depending on housing type (single family, townhouse, apartment etc.) and school level (elementary, middle and high). Surveys of sample subdivisions to assess an accurate yield factor are completed on a regular basis. (See Appendix)

Table 6

Harford County Elementary Schools

Utilization Chart

1997

		Actual		Projected					
		1997 - 1998		1998 - 1999		1999 - 2000		2000 - 2001	
	CAPACITY	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.
Abingdon	600	666	111%	784	131%	824	137%	867	145%
Bakerfield	500	448	90%	449	90%	475	95%	493	99%
Bel Air *	525	557	106%	562	107%	588	112%	609	116%
Church Creek	600	711	119%	751	125%	792	132%	822	137%
Churchville	385	309	80%	305	79%	295	77%	279	72%
Darlington	200	168	84%	157	79%	153	77%	154	77%
Deerfield	545	554	102%	536	98%	519	95%	491	90%
Dublin	325	275	85%	276	85%	262	81%	254	78%
Edgewood	550	434	79%	428	78%	441	80%	439	80%
Emmorton	600	510	85%	524	87%	529	88%	522	87%
Forest Lakes *	600	557	93%	615	103%	607	101%	617	103%
Fountain Green	600	604	101%	586	98%	569	95%	572	95%
Hall's Cross Rds	656	405	62%	408	62%	442	67%	458	70%
Havre de Grace	655	462	71%	460	70%	480	73%	474	72%
Hickory *	661	688	104%	707	107%	654	99%	645	98%
Hillsdale	460	416	90%	398	87%	405	88%	401	87%
Home/Wakefield *	980	1011	103%	991	101%	982	100%	953	97%
Jarrettsville	585	510	87%	479	82%	479	82%	467	80%
Joppatowne	530	460	87%	466	88%	480	91%	478	90%
Magnolia	525	618	118%	638	122%	621	118%	636	121%
Meadowvale	570	569	100%	567	99%	564	99%	561	98%
Norrisville	200	213	107%	207	104%	211	106%	204	102%
North Bend	600	516	86%	501	84%	477	80%	463	77%
North Harford	460	435	95%	448	97%	457	99%	462	100%
Prospect Mill	750	809	108%	802	107%	780	104%	753	100%
Ring Factory	600	562	94%	602	100%	608	101%	620	103%
Riverside	600	551	92%	548	91%	533	89%	527	88%
Roye-Williams	780	597	77%	571	73%	591	76%	603	77%
WP/OPR	1020	967	95%	966	95%	1005	99%	996	98%
Wm. S. James	575	604	105%	600	104%	570	99%	557	97%
Youth's Benefit	985	1038	105%	974	99%	955	97%	936	95%
TOTAL	18,222	17,224	95%	17,306	95%	17,346	95%	17,313	95%

* Forest Hill Elementary School is currently occupying the future Forest Lakes Elementary site. Forest Lakes Elementary School is scheduled to open for the 1998-99 school year and is planned to provide relief for Forest Hill, Bel Air, Hickory, and Homestead Wakefield elementary schools.

Source: Harford County Public Schools & Dept. of Planning & Zoning, October, 1997.

Table 7

Harford County Middle Schools

Utilization Chart

1997

MIDDLE SCHOOL	CAPACITY	Actual 1997-1998 ENROLL	Actual 1997-1998 %UTIL	Projected 1998-1999 ENROLL	Projected 1998-1999 %UTIL	Projected 1999-2000 ENROLL	Projected 1999-2000 %UTIL	Projected 2000-2001 ENROLL	Projected 2000-2001 %UTIL
Aberdeen	1,530	1,244	81%	1,285	84%	1,331	87%	1,354	88%
Bel Air	1,310	1,198	91%	1,201	92%	1,268	97%	1,307	100%
Edgewood	1,390	1,120	81%	1,101	79%	1,105	79%	1,175	85%
Fallston	900	1,121	**125%**	1,182	**131%**	1,174	**130%**	1,142	**127%**
Havre de Grace	800	585	73%	598	75%	602	75%	605	76%
Magnolia	1,070	907	85%	892	83%	920	86%	912	85%
North Harford	1,240	1,057	85%	1,034	83%	1,049	85%	1,022	82%
Southampton	1,550	1,710	110%	1,751	113%	1,755	113%	1,797	116%
*** Total**	9,790	8,946	91%	9,044	92%	9,204	94%	9,314	95%

* Includes 4 Students enrolled in Alternative Education Programs.

Source: Harford County Public Schools and Department of Planning and Zoning, October, 1997.

Table 8

Harford County High Schools
Utilization Chart
1997

HIGH SCHOOL	CAPACITY	Actual 1997-1998 ENROLL	Actual 1997-1998 %UTIL	Projected 1998-1999 ENROLL	Projected 1998-1999 %UTIL	Projected 1999-2000 ENROLL	Projected 1999-2000 %UTIL	Projected 2000-2001 ENROLL	Projected 2000-2001 %UTIL
Aberdeen	1,875	1,276	68%	1,307	70%	1,322	71%	1,315	70%
Bel Air	1,410	1,440	102%	1,489	106%	1,493	106%	1,480	105%
C. Milton Wright	1,550	1,542	99%	1,683	109%	1,818	117%	1,901	**123%**
Edgewood	1,380	1,071	78%	1,137	82%	1,137	82%	1,113	81%
Fallston	1,670	1,519	91%	1,542	92%	1,635	98%	1,681	101%
* Harford Technical	740	833	113%	831	112%	901	**122%**	906	**122%**
Havre de Grace	900	665	74%	686	76%	697	77%	700	78%
Joppatowne	1,140	919	81%	970	85%	997	87%	1,011	89%
North Harford	1,440	1,117	78%	1,165	81%	1,163	81%	1,184	82%
Total	12,105	10,382	86%	10,810	89%	11,163	92%	11,291	93%
Total Secondary	21,895	19,328	88%	19,854	91%	20,367	93%	20,605	94%

* Currently Funded for Construction Improvements

Source: Harford County Public Schools and Department of Planning and Zoning, October, 1997.

Table 9

Harford County Residential Building Permit Activity
by Elementary School District
1993 - 1997

SCHOOL	1993 BUILDING PERMITS ISSUED BY DWELLING TYPE					1994 BUILDING PERMITS ISSUED BY DWELLING TYPE					1995 BUILDING PERMITS ISSUED BY DWELLING TYPE					1996 BUILDING PERMITS ISSUED BY DWELLING TYPE					1997 BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL
Abingdon	150	69	0	0	219	105	120	0	0	225	79	158	0	0	237	81	93	0	0	174	69	128	0	0	197
Bakerfield	51	0	0	0	51	11	5	0	1	17	20	31	0	0	51	14	55	0	0	69	31	10	0	2	43
Bel Air	12	4	0	0	16	5	0	0	0	5	7	0	0	0	7	8	0	0	1	9	26	16	0	0	42
Church Creek	53	37	12	0	102	10	50	10	1	71	11	39	0	0	50	41	48	116	0	205	33	1	1	1	36
Churchville	26	0	0	1	27	29	0	0	2	31	35	0	0	1	36	34	0	0	3	37	26	0	0	1	27
Darlington	7	0	0	2	9	5	0	0	2	7	6	0	0	4	10	15	0	0	4	19	14	0	0	3	17
Deerfield	19	0	0	0	19	45	0	0	0	45	18	0	0	0	18	39	0	0	0	39	38	0	0	0	38
Dublin	10	0	0	2	12	6	0	0	3	9	15	0	0	4	19	22	0	0	4	26	11	0	0	3	14
Edgewood	2	0	0	0	2	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Emmorton	50	30	24	0	104	60	38	0	0	98	35	42	0	0	77	38	49	0	0	87	13	19	0	0	32
Forest Hill	71	12	12	0	95	76	74	24	0	174	56	15	24	3	98	95	28	0	0	123	154	26	0	1	181
Fountain Green	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
Hall's Cross Roads	0	0	0	0	0	7	0	0	0	7	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0
Havre de Grace	0	0	1	1	2	4	0	10	0	14	0	0	1	1	2	2	0	16	0	18	1	0	0	0	1
Hickory	13	68	12	1	94	33	54	24	0	111	44	64	0	0	108	111	65	24	0	200	177	67	60	1	305
Hillsdale	8	0	0	0	8	5	0	0	1	6	8	0	0	0	8	11	0	0	0	11	8	0	0	0	8
Homestead/Wakefield	98	4	25	0	127	55	37	53	0	145	53	4	50	0	107	54	18	35	0	107	38	1	0	0	39
Jarrettsville	26	0	0	1	27	25	0	0	2	27	21	0	0	2	23	20	0	0	1	21	15	0	0	0	15
Joppatowne	2	0	0	1	3	28	0	0	1	29	67	0	0	2	69	44	19	1	0	64	82	47	12	0	141
Magnolia	4	0	0	0	4	2	0	0	0	2	2	0	0	0	2	32	0	0	0	32	47	0	0	0	47
Meadowvale	129	83	1	1	214	84	0	24	2	110	78	12	6	0	96	90	23	48	2	163	2	0	0	2	4
Norrisville	11	0	0	2	13	9	0	1	0	10	8	0	0	1	9	12	0	0	2	14	15	0	0	2	17
North Bend	35	0	0	2	37	32	0	1	9	42	32	0	0	0	32	37	0	0	7	44	30	0	0	3	33
North Harford	47	0	0	12	59	29	0	0	2	31	34	0	0	7	41	46	0	0	5	51	32	0	0	7	39
Prospect Mill	172	96	66	1	335	96	58	36	0	190	68	24	0	1	93	89	0	0	0	89	58	0	41	0	99
Ring Factory	88	7	24	0	119	78	15	25	0	118	80	39	36	0	155	61	70	48	0	179	38	36	36	0	110
Riverside	4	0	0	0	4	0	0	0	1	1	3	0	0	0	3	14	0	0	0	14	8	0	0	0	8
Roye-Williams	1	0	0	1	2	0	0	0	1	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0
Wm. Paca/Old Post Rd	57	0	28	1	86	66	100	12	0	178	53	117	0	0	170	12	68	0	0	80	49	33	0	2	84
Wm. S. James	16	0	0	1	17	11	0	0	0	11	6	0	0	0	6	1	0	0	0	1	1	0	0	0	1
Youth's Benefit	56	0	2	1	59	40	0	0	1	41	39	0	0	0	39	52	0	0	0	52	92	0	0	0	92
TOTAL	1,218	410	207	31	1,866	959	551	220	29	1,759	889	545	117	26	1,577	1,076	536	288	29	1,929	1,110	384	150	28	1,672

Source: Harford County Dept. of Planning & Zoning, March, 1998.

Table 10

Harford County Residential Building Permit Activity
by Middle School District
1993 - 1997

SCHOOL	1993 BUILDING PERMITS ISSUED BY DWELLING TYPE					1994 BUILDING PERMITS ISSUED BY DWELLING TYPE					1995 BUILDING PERMITS ISSUED BY DWELLING TYPE					1996 BUILDING PERMITS ISSUED BY DWELLING TYPE					1997 BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL
Aberdeen	118	37	12	1	168	40	31	10	6	87	57	35	0	1	93	75	62	116	1	254	78	10	1	3	92
Bel Air	243	45	73	1	362	200	90	78	0	368	168	85	86	0	339	151	137	83	0	371	87	56	36	0	179
Edgewood	230	69	28	1	328	219	244	12	0	475	151	310	0	0	461	134	202	0	1	337	157	162	0	3	322
Fallston	124	12	14	1	151	85	74	24	1	184	81	15	24	1	121	118	28	0	0	146	199	26	0	0	225
Havre de Grace	136	83	2	4	225	93	0	34	4	131	84	12	7	5	108	106	23	64	6	199	17	0	0	5	22
Magnolia	10	0	0	1	11	30	0	0	2	32	72	0	0	2	74	90	19	1	0	110	137	47	12	0	196
North Harford	123	0	0	19	142	98	0	2	15	115	104	0	0	13	117	130	0	0	18	148	98	0	0	14	112
Southampton	234	164	78	3	479	194	112	60	1	367	172	88	0	4	264	272	65	24	3	364	337	83	101	3	524
TOTAL	1,218	410	207	31	1,866	959	551	220	29	1,759	889	545	117	26	1,577	1,076	536	288	29	1,929	1110	384	150	28	1,672

Source: Harford County Department of Planning and Zoning, March, 1998.

Table 11

Harford County Residential Building Permit Activity
by High School District
1993 - 1997

HIGH SCHOOLS

SCHOOL	1993 BUILDING PERMITS ISSUED BY DWELLING TYPE					1994 BUILDING PERMITS ISSUED BY DWELLING TYPE					1995 BUILDING PERMITS ISSUED BY DWELLING TYPE					1996 BUILDING PERMITS ISSUED BY DWELLING TYPE					1997 BUILDING PERMITS ISSUED BY DWELLING TYPE				
	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL	SF	TH	APT/ CONDO	MH	TOTAL
Aberdeen	118	37	12	1	168	40	31	10	6	87	57	35	0	1	93	75	62	116	1	254	78	10	1	3	92
Bel Air	243	45	73	1	362	200	90	78	0	368	168	85	86	0	339	151	137	83	0	371	105	56	36	0	197
Edgewood	230	69	28	1	328	219	244	12	0	475	151	310	0	0	461	134	202	0	1	337	157	162	0	3	322
Fallston	128	18	26	1	173	99	80	48	1	228	93	22	24	1	140	136	74	24	0	234	223	61	60	0	344
Havre de Grace	136	83	2	4	225	93	0	34	4	131	84	12	7	5	108	106	23	64	6	199	17	0	0	5	22
Joppatowne	10	0	0	1	11	30	0	0	2	32	72	0	0	2	74	90	19	1	0	110	137	47	12	0	196
North Harford	123	0	0	19	142	98	0	2	15	115	104	0	0	13	117	130	0	0	18	148	98	0	0	14	112
C. Milton Wright	230	158	66	3	457	180	106	36	1	323	160	81	0	4	245	254	19	0	3	276	295	48	41	3	387
TOTAL	1,218	410	207	31	1,866	959	551	220	29	1,759	889	545	117	26	1,577	1,076	536	288	29	1,929	1110	384	150	28	1,672

Source: Harford County Department of Planning and Zoning, March, 1998.

Table 12

Harford County
Population and Households
by Elementary School District

1993 - 1997

SCHOOL	1993 *		1994 *		1995 *		1996*		1997*	
	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households
Abingdon	8,605	3,012	9,121	3,265	9,908	3,489	10,562	3,739	10,968	3,900
Bakerfield	7,542	2,640	7,655	2,687	7,678	2,704	7,774	2,752	7,924	2,818
Bel Air	9,608	3,363	9,720	3,439	9,780	3,444	9,747	3,451	9,728	3,459
Churchville	5,590	1,957	5,635	2,248	6,576	2,316	6,676	2,363	6,649	2,364
Church Creek	7,493	2,623	7,760	2,485	7,274	2,562	7,399	2,620	7,804	2,775
Darlington	2,200	770	2,212	775	2,219	781	2,234	791	2,270	807
Deerfield	5,544	1,941	5,581	1,957	5,678	1,999	5,696	2,017	5,775	2,054
Dublin	3,760	1,316	3,780	1,340	3,830	1,349	3,861	1,367	3,913	1,391
Edgewood	4,845	1,696	4,839	1,699	4,830	1,701	4,804	1,701	4,783	1,701
Emmorton	4,311	1,509	4,693	1,556	4,682	1,649	4,864	1,722	5,053	1,797
Forest Hill	6,756	2,365	7,004	2,456	7,615	2,681	8,007	2,834	8,003	2,846
Fountain Green	6,136	2,148	6,305	2,103	6,118	2,154	6,085	2,154	5,918	2,104
Hall's Cross Roads	5,244	1,836	5,228	1,831	5,218	1,837	5,217	1,847	5,194	1,847
Havre de Grace	7,340	2,569	7,324	2,570	7,337	2,584	7,304	2,586	7,317	2,602
Hickory	6,018	2,107	6,599	2,188	6,514	2,294	6,727	2,381	7,378	2,624
Hillsdale	5,366	1,878	5,369	1,890	5,383	1,896	5,376	1,903	5,371	1,910
Homestead/Wakefield	13,232	4,632	13,553	4,750	13,880	4,887	14,093	4,989	14,299	5,085
Jarrettsville	6,290	2,202	6,342	2,230	6,407	2,256	6,435	2,278	6,462	2,298
Joppatowne	8,307	2,908	8,296	2,909	8,339	2,936	8,480	3,002	8,613	3,063
Magnolia	4,095	1,434	4,094	1,437	4,087	1,439	4,071	1,441	4,133	1,470
Meadowvale	6,589	2,307	7,046	2,512	7,430	2,616	7,648	2,707	8,101	2,880
Norrisville	2,234	782	2,266	780	2,243	790	2,255	798	2,282	812
North Bend	5,438	1,903	5,519	1,949	5,648	1,989	5,704	2,019	5,797	2,061
North Harford	5,356	1,875	5,497	1,925	5,551	1,955	5,632	1,994	5,735	2,039
Prospect Mill	5,515	1,931	5,797	2,288	7,180	2,528	7,477	2,647	7,404	2,633
Ring Factory	5,257	1,840	5,455	2,001	6,000	2,113	6,384	2,260	6,931	2,465
Riverside	8,979	3,143	8,958	3,146	8,937	3,147	8,897	3,150	8,896	3,163
Roye-Williams	4,817	1,686	4,809	1,689	4,800	1,690	4,777	1,691	4,758	1,692
Wm. Paca/Old Post Rd	9,204	3,222	9,331	3,242	9,686	3,411	10,091	3,572	10,260	3,648
Wm. S. James	4,471	1,565	4,612	1,532	4,380	1,542	4,372	1,548	4,356	1,549
Youth's Benefit	13,749	4,813	13,862	4,866	13,920	4,902	13,952	4,939	14,025	4,983
TOTAL	199,892	69,971	204,263	71,745	209,130	73,640	212,600	75,260	216,100	76,840

*Population as of April 1.

Source: Harford County Dept. of Planning & Zoning, May, 1997.

Table 13

Harford County
Population and Households
by Middle School District

1993 - 1997

SCHOOL	1993 *		1994 *		1995 *		1996 *		1997 *	
	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households
Aberdeen	32,631	11,423	32,976	11,582	33,285	11,705	33,393	11,821	33,717	11,989
Bel Air	25,317	8,862	26,211	9,206	27,173	9,556	27,903	9,878	28,829	10,251
Edgewood	28,549	9,994	29,340	10,305	30,721	10,853	31,981	11,321	32,466	11,544
Fallston	20,491	7,173	20,832	7,317	21,302	7,491	21,554	7,630	21,811	7,756
Havre de Grace	16,121	5,643	16,675	5,857	17,009	5,981	17,186	6,084	17,685	6,288
Magnolia	21,661	7,583	21,618	7,593	21,678	7,623	21,733	7,694	21,926	7,796
North Harford	21,910	7,670	22,220	7,805	22,504	7,914	22,669	8,025	22,956	8,163
Southampton	33,212	11,623	34,391	12,080	35,458	12,517	36,181	12,807	36,710	13,053
TOTAL	199,892	69,971	204,263	71,745	209,130	73,640	212,600	75,260	216,100	76,840

* Population as of April 1

* Source: Harford County Department of Planning and Zoning, March, 1998.

Table 14

Harford County
Population and Households
by High School District

1993 - 1997

SCHOOL	1993 *		1994 *		1995 *		1996 *		1997 *	
	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households
Aberdeen	32,631	11,423	32,976	11,582	33,285	11,705	33,393	11,821	33,717	11,989
Bel Air	32,276	11,298	33,147	11,642	34,100	11,992	34,784	12,314	28,829	12,687
Edgewood	28,549	9,994	29,340	10,305	30,721	10,853	31,981	11,321	32,466	9,579
Fallston	22,991	8,048	23,382	8,212	23,969	8,429	24,254	8,586	21,811	11,544
Havre de Grace	16,121	5,643	16,675	5,857	17,009	5,981	17,186	6,084	17,685	8,794
Joppatowne	21,661	7,583	21,618	7,593	21,678	7,623	21,733	7,694	21,926	6,288
North Harford	21,910	7,670	22,220	7,805	22,504	7,914	22,669	8,025	22,956	7,796
C. Milton Wright	23,753	8,312	24,905	8,749	25,864	9,143	26,600	9,415	36,710	8,163
TOTAL	199,892	69,971	204,263	71,745	209,130	73,640	212,600	75,260	216,100	76,840

* Population as of April 1

* Source: Harford County Department of Planning and Zoning, March, 1998.

WATER AND SEWERAGE

Introduction

The data included in this section for the water and sewerage system are aggregated by the water & sewer service area, which essentially reflects the Development Envelope as defined in the 1996 Harford County Land Use Element Plan. Additional information is included in this report on water/sewerage usage by dwelling type and for nonresidential uses, an inventory of existing water consumption/sewerage flows, demand projections (including the basis for their computation), and a list of capital projects contained in the County's Capital Improvements Program for expanding facilities - including project status. This information is extracted from the "1997 Water and Sewer Adequate Public Facilities Report," and can be found on pages 29 - 34 of this report.

Water and Sewer Facility Projection Methodology

Water:
The Harford County water service area is divided into four pressure zones because of varying topography within the Development Envelope. To provide an adequate supply of water, the transmission lines, pumping and storage facilities for all zones must be sized for estimated future demands. In 1990, the average daily water demand by customers served by the County's central system was approximately 5.9 MGD, with a corresponding maximum day demand of approximately 7.6 MGD. In 1997, the County's average day and maximum day demands were 9.6 MGD and 14.3 MGD respectively. To keep pace with the projected growth, staged construction programs are established so that facilities are available as required and are distributed over the long term.

There are seven multiple-use water systems that are not maintained or operated by Harford County, but are subject to the APF provision of the County Code. These systems are listed below:

1) Maryland-American Water Co.
2) Conowingo Power Co.
3) Campus Hills Water Works Inc.
4) Darlington
5) Greenridge Utilities Inc.
6) Lakeside Vista
7) Bel Air Heights

Sewerage:

The sewage flows to Harford County's existing Sod Run and Joppatowne Wastewater Treatment Plants (WWTP) originate from a portion of the Development Envelope. The area between the municipalities of Aberdeen and Havre de Grace as well as the cities themselves, are within the Development Envelope and are served by the municipal sewerage facilities. A complete "Sewer System Capacity Analysis" is included on pages 8-10 and pages 32-147 of the 1997 Water and Sewer Adequate Public Facilities Report.

The average daily influent flow to the Sod Run WWTP in 1997 was approximately 9.7 MGD, exclusive of recycle flows and septage. The average daily influent flow to the Joppatowne WWTP in 1997 was approximately 0.665 MGD. The determination of future wastewater flows to wastewater treatment plants are made by using population and household projections developed by Harford County Department of Planning and Zoning for the years 1995 through 2010. The projections were distributed by local transportation zone (LTZs) by aggregating the ultimate development in terms of equivalent dwelling units into sewerage drainage areas. In order to keep pace with projected growth, construction of an expansion of the Sod Run Wastewater Treatment Plant from 12 MGD in 1995 to 20 MGD by 2000 has been initiated. There are two private multi-use sewerage systems in the County. The Conowingo-Susquehanna Power Company provides sewerage service to the Conowingo Power Plant and some surrounding residences and the Swan Harbor Dell Mobile Home Park which serves about 160 units.

Table 15
JANUARY - DECEMBER 1997
WATER CONSUMPTION & SEWAGE GENERATION

This table reflects the total number of water and sewer customers and the water consumption and sewage generations for residential and commercial/industrial users.

	1997
Total Number of Connections	30,861
WATER	
Water Average Consumption	9.6 MGD
Water Peak Day Consumption	14.3 MGD
Average Water Usage per Connection (gal/day)	337
Residential Unit Water Usage (gal/day)	170
Average Commercial/Industrial Water Usage (gal/day)	3,052
SEWAGE	
Sewage Average Flows	10.4 MGD
Sewage Peak Day Flows	14.8 MGD
Average Sewage per Connection (gal/day)	352
Residential Sewage Generation (gal/day)	170
Average Commercial/Industrial Sewage Generation (gal/day)	3,052

* MGD = Million Gallons per Day

Table 16

HARFORD COUNTY SYSTEM WATER DEMAND PROJECTIONS

SYSTEM WIDE RESIDENTIAL/ COMMERCIAL INDUSTRIAL WATER DEMAND	YEAR										
	1990	1993	1994	1995	1996	1997	2000	2005	2010	2015	2020
FIRST ZONE											
Avg. Day, mgd	3.4	3.2	3.4	4.1	4.05	4.5	5.6	6.6	7.6	9.0	10.4
Max. Day, mgd	4.3	4.6	4.8	6.0	4.8	6.5	8.7	10.6	12.7	15.3	18.2
Total of Second, Third and Fourth Zones Requirements											
Avg. Day, mgd	2.5	3.5	3.7	3.8	4.5	5.0	4.8	6.3	8.1	9.0	9.9
Max. Day, mgd	3.3	3.9	4.0	5.6	5.9	6.8	8.5	11.8	16.0	17.7	19.5
Aberdeen											
Avg. Day, mgd	0.0	0.0	0.0	0.5	0.05	.03	0.5	0.5	0.5	0.5	0.5
Max. Day, mgd **	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Maryland-American Water Company											
Avg. Day, mgd	0.0	0.0	0.0	0.0	0.0	.07	0.01	0.01	0.01	0.01	0.01
Max. Day, mgd **	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.5	0.5	0.5
Total											
Avg. Day, mgd	5.9	6.7	7.1	8.4	8.6	9.6	10.9	13.4	16.2	18.5	20.8
Max. Day, mgd	7.6	8.5	8.8	12.1	11.2	14.3	18.2	23.4	29.7	34.0	38.7

** - Allocated maximum day flow projections per 1995, 1996, AND 1997 service agreements.

Table 17

Harford County Present and Projected Sewerage Demands and Planned Capacities in Million Gallons Per Day - (MGD)

	SERVICE AREAS			
	PLANNING YEAR	HARFORD COUNTY	JOPPATOWNE	SPRING MEADOWS
PER CAPITA SEWAGE FLOW	1993-2010	90	80	65
RESIDENTIAL POPULATION SERVED	1993	70,732	7,000	153
	1994	78,849	7,000	153
	1995	81,696	7,000	153
	1996	85,449	7,300	153
	1997	86,000	7,400	153
	2000	92,830	8,100	153
	2005	104,000	8,800	153
	2010	113,000	9,500	153
DOMESTIC FLOW (ADF)	1993	7.7	.59	.01
	1994	7.9	.56	.01
	1995	7.7	.56	.01
	1996	8.1	.56	.01
	1997	7.8	.56	.01
	2000	8.6	.59	.01
	2005	9.4	.65	.01
	2010	10.0	.76	.01
INDUSTRIAL FLOW (ADF)	1993	.4	0.0	0
	1994	.5	0.0	0
	1995	.5	0.0	0
	1996	.5	0.0	0
	1997	.5	0.0	0
	2000	.5	0.0	0
	2005	.6	0.0	0
	2010	.6	0.0	0
INFILTRATION/INFLOW (ADF)	1993	1.0	.19	0
	1994	1.4	.19	0
	1995	1.4	.19	0
	1996	1.5	.19	0
	1997	1.4	.19	0
	2000	1.6	.19	0
	2005	1.7	.19	0
	2010	1.9	.19	0
TOTAL FLOW	1993	9.1	.78	.01
	1994	9.8	.75	.01
	1995	9.6	.75	.01
	1996	10.0	.75	.01
	1997	9.7	.75	.01
	2000	10.7	.78	.01
	2005	11.7	.84	.01
	2010	12.5	.95	.01
SYSTEM CAPACITY	1993	10.0	.75	.01
	1994	12.0	.75	.01
	1995	12.0	.75	.01
	1996	12.0	.75	.01
	1997	20.0	.95	.01
	2000	20.0	.95	.01
	2005	20.0	.95	.01
	2010	20.0	.95	.01

Table 18

1997 Existing Water & Sewer Capital Projects

The Capital Improvement Program establishes projects for expanding water and sew facilities. This list of 1997 Capital Projects includes the projects status.

Project Number	Project Name	Project Status
6438	Winters Run Parallel Interceptor	Phase 2: Under construction
6440	Infiltration/Inflow	Defining scope
6441	Fallston Sewer Petition	Construction completed
6458	Lower Bynum Run Parallel Interceptor	Phase 1: Under construction Phase 2: Design complete
6459	Bush Creek Sewage P.S. II	Under construction
6486	Whiteford - Cardiff Sewer Petition	Under design & Awaiting Right-of-Ways
6487	Perryman Well Head Protection Program	Preparing documentation and policies
6509	Singer Road Water Extension	Design completed & Under condemnation
6510	Abingdon Rd. Water Trans. Main I	Design completed
6510	Abingdon Rd. Water Trans. Main IV	Design completed
6516	Laurel Bush Rd. Water Trans. Main	Design completed & Construction Contract Awarded
6533	Joppa Storage Tank	Construction completed
6540	Country Walk Tank & Booster Station	Design completed
6547	Underwood Lane Sewer Petition	Under design & Awaiting Right-of-Ways
6553	Upper Lake Fanny Sewer Petition	Under design
6559	Old Emmorton Road Sewer Petition	Under design & Awaiting Right-of-Ways
6563	Fox Bow Pumping Station	Design completed
6564	Forest Lakes Elevated Water Storage Tank	Under construction
6565	Fallston Fire Storage & Booster Station	Design completed
6568	Magnolia Water Booster Station	Under construction
6575	Tollgate Rd & Plumtree Rd Water	Under design
6581	Sod Run Interceptor Sewer Parallel Ph. I	Under design
6582	Bynum Run Collector Section III	Design completed
	Sod Run WWTP - Stage 2	Under construction

ROAD SYSTEM

Introduction

The information for the APF Road System contained in this section includes the following: signalized and unsignalized intersection capacity analysis results - existing conditions (Tables 19 and 20), average daily count locations (Table 21), a list of approved county capital projects funded for construction in FY 98 (Table 22), and a list of state consolidated transportation program projects funded for construction FY 98 (Table 23). This information will help identify existing deficiencies in the road system and guide both County and State capital project funding to the most critical road projects.

The intent of the APF Roads provisions of the County Code is to create a mechanism that requires proposed development to make appropriate and reasonable road improvements, based on the proposed development's impact to the road.

Road Intersection Analysis Methodology

A key feature of the APF Road Intersection regulations is the requirement for preparation of a traffic impact analysis (TIA) for residential and nonresidential uses that generate more than 249 trips. The TIA provides information regarding the impact of generated trips from proposed land uses on traffic safety and traffic operation within a designated area and recommending solutions to mitigate the impact. The method of conducting a Traffic Impact Analysis is outlined in the "Harford County Traffic Impact Analysis Guidelines".

A complete TIA includes the following:

- The designation of the study area as required in the APF regulations based on whether the proposed development is inside or outside of the Development Envelope.

  Inside the Development Envelope :
  The TIA shall include all the existing County and State roads from the point of entrance of site to the second intersection of an arterial roadway or higher functional classification road, in all directions. Developments which generate 1,500 or more trips per day may be required to expand the study area.

  Outside the Development Envelope :
  The TIA shall include all existing County and State roads from point of entrance to first intersection of a major collector or higher classification road, in all directions.

- An analysis of existing conditions including traffic counts, lane configuration, and signal timings.

- An analysis of background conditions without site development, including growth in background traffic, future traffic generated by nearby proposed developments and the determination of Levels of Service with any approved/funded State and County Capital projects.

- An analysis of the projected conditions with site development, including the traffic being generated by the proposed development and the background traffic.

- An explanation of the results with recommended improvements as necessary.

The Developer is required to provide improvements where the trips generated by the development reduce the Level Of Service (LOS) from adequate to a LOS below the standard. The standard for intersections within the Development Envelope will be LOS D. If existing LOS is E or F at an intersection within the Development Envelope, the developer must mitigate the impact of the development's new trips. The standard for intersections outside the Development Envelope will be LOS C. If the existing LOS is D or lower, then the developer must mitigate the impact of the development's new trips.

Table 19

Signalized Intersection Capacity Analyses Results

Existing Conditions

1997

Intersection	Level of Service (Peak Hour)	Delay in Seconds (P.M.)
MD 24 and Bel Air South Parkway	F	> 60
MD 7 and U.S. 40	D	32.8
MD 24 and MD 924 (Tollgate)	F	> 60
MD 24 and Ring Factory Road	B	15.0
MD 543 and U.S. 1	C	20.0
MD 924 and Abingdon Road	D	26.9
MD 22 and MD 136	C	15.3
MD 924 and Moores Mill Road	C	15.4
MD 24 and MD 755 (south)	D	31.8
MD 22 and Brierhill Road	C	23.1
MD 543 and MD 22	D	29.8
MD 24 and Trimble Road	B	7.4
MD 136 and MD 165	B	7.2
MD 152 and U.S. 1	F	> 60
MD 24 and U.S. 1	C	21.5
MD 152 & Trimble Road	D	32.9
MD 24 and Jarrettsville Road	C	15.1

Table 20

Unsignalized Intersection Capacity Analysis

Existing Conditions

1997

Intersection	Level of Service (Peak Hour) Eastbound	Westbound	Northbound	Southbound
MD 24 and Plumtree Road	C	D	--	A
MD 924 and Plumtree Road	F	--	B	--
MD 152 and Singer Road	--	F	--	C
MD 159 and Spesutia Road	A	A	B	A
MD 7 and MD 159	B	--	A	--
Abingdon Road and Hookers Mill	A	--	--	A
MD 24 and Forest Valley Road	F	--	B	--
MD 152 and Hanson Road	F	F	B	B
MD 165 and MD 24	B	B	A	A
Interstate 95 and MD 24 Ramp	--	F	--	--
* MD 543 and Wheel Road	F	D	A	A

* MD 543 and Wheel Road is now a signalized intersection.

Table 21

Average Daily Count Locations - 1997

Road Name	Location	Average Weekday Daily Count
Abingdon Road	North of I-95	8,413
Beards Hill Road	North of Churchville Road	10,594
Chapel Road	North of I-95	1,671
Hanson Road	South of Silverbell Road	2,571
Jarrettsville Road	East of Maryland 24	8,776
MD 152	South of U.S. 1	21,375
MD 24	North of Singer Road	33,125
MD 543	South of MD 22	14,450
Moores Mill Road	West of Old English Court	8,535
Moores Mill Road	West of Coconut Court	9,919
Pleasantville Road	North of Putnam Road	2,523
Trimble Road	East of MD 24	4,135
U.S. 1	North of MD 152	23,650
U.S. 40	North of MD 24	19,356
Stepney Road	North of I-95, South of Carsins Run	1,028
Ring Factory Road	West of MD 24	4,333
Singer Road	East of MD 24	8,459
Singer Road	West of MD 24	8,329
MD 7	West of MD 24	4,914
Hanson Road	West of MD 24	8,715
Ring Factory Road	East of MD 24	9,784
Plumtree Road	East of MD 24	3,360
Trimble Road	West of MD 24	4,078

Table 22

List of Approved County Capital Projects

Funded for Construction in FY 98

* Singer Road	Improvements
* Tollgate Road / Boulton Street	Reconstruction
Aldino - Stepney Road Bridge	Reconstruction
Bottom Road Bridge	Rehabilitation
Bridge Inspection Program	Inspection
Bridge Rehabilitation Program	Rehabilitation
Bridge Scour Repairs	Rehabilitation
Bynum Road / Route 24 - Marshall Drive	Road Improvement
Forge Hill Road Bridge	Rehabilitation
Hess Road Bridge	Rehabilitation
Joppa Farm Road Bridge	Replacement
Love Road Bridge	Replacement
Southampton Road Bridge	Reconstruction
Vinegar Hill Road Bridge	Rehabilitation

* Intersection Improvements

Table 23

State Consolidated Transportation Program

Funded for Construction in FY 98

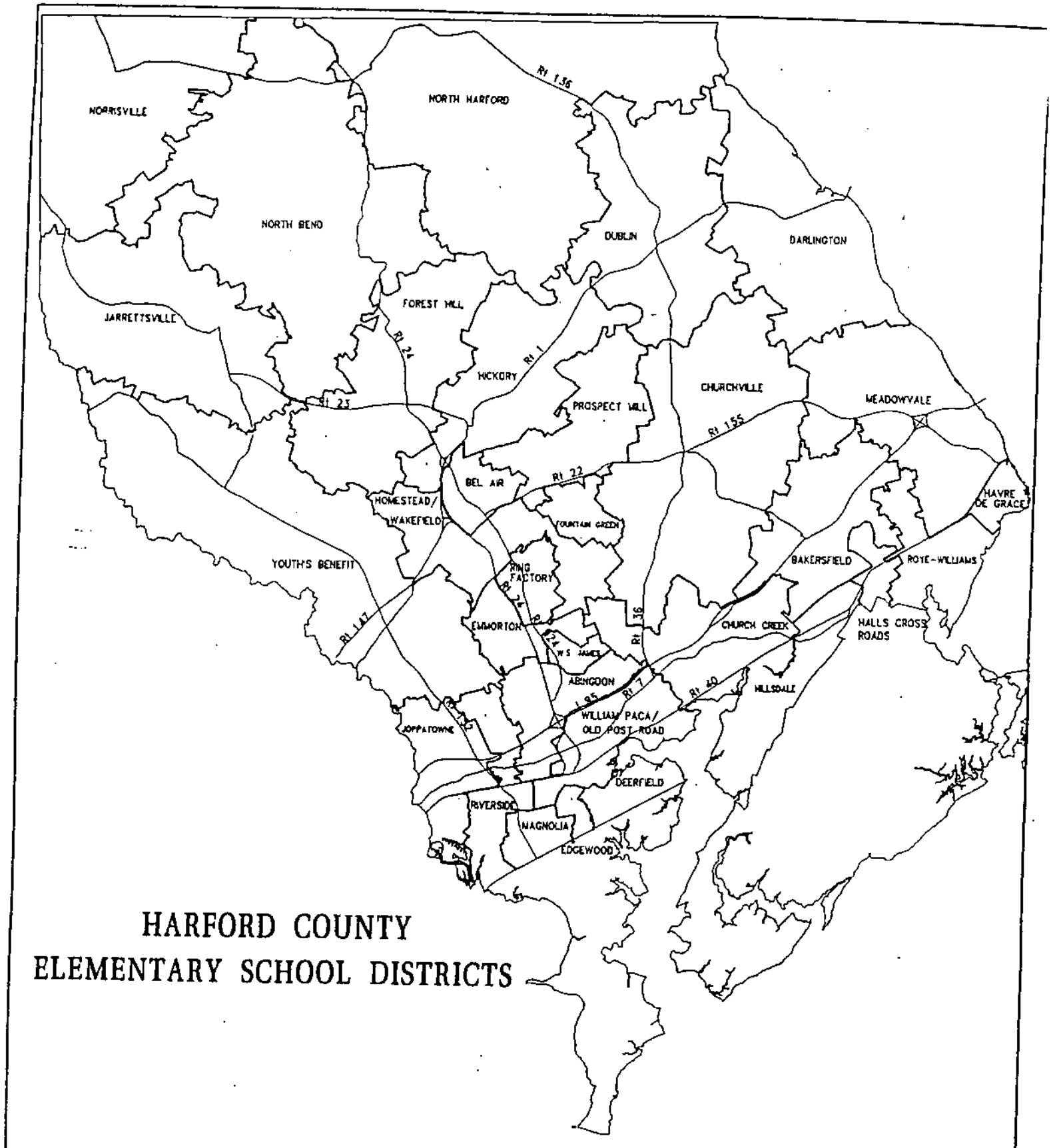
U.S. 1 / Bel Air Bypass	Construct Auxillary Lanes
MD 623 / Flintville Road Bridge	Replacement
MD 22 / East of MD 155 to I-95	Resurface
MD 23 / High Point Road to MD 165	Resurface
MD 152 / Connolly Road to MD 165	Resurface
MD 440 / East of Scarboro Road to MD 136	Resurface
U.S. 1 at MD 23 (Granary Road)	Safety Improvement
MD 924 / Bond Street, U.S. 1 Business Route to Gordon Street	Streetscape

APPENDIX

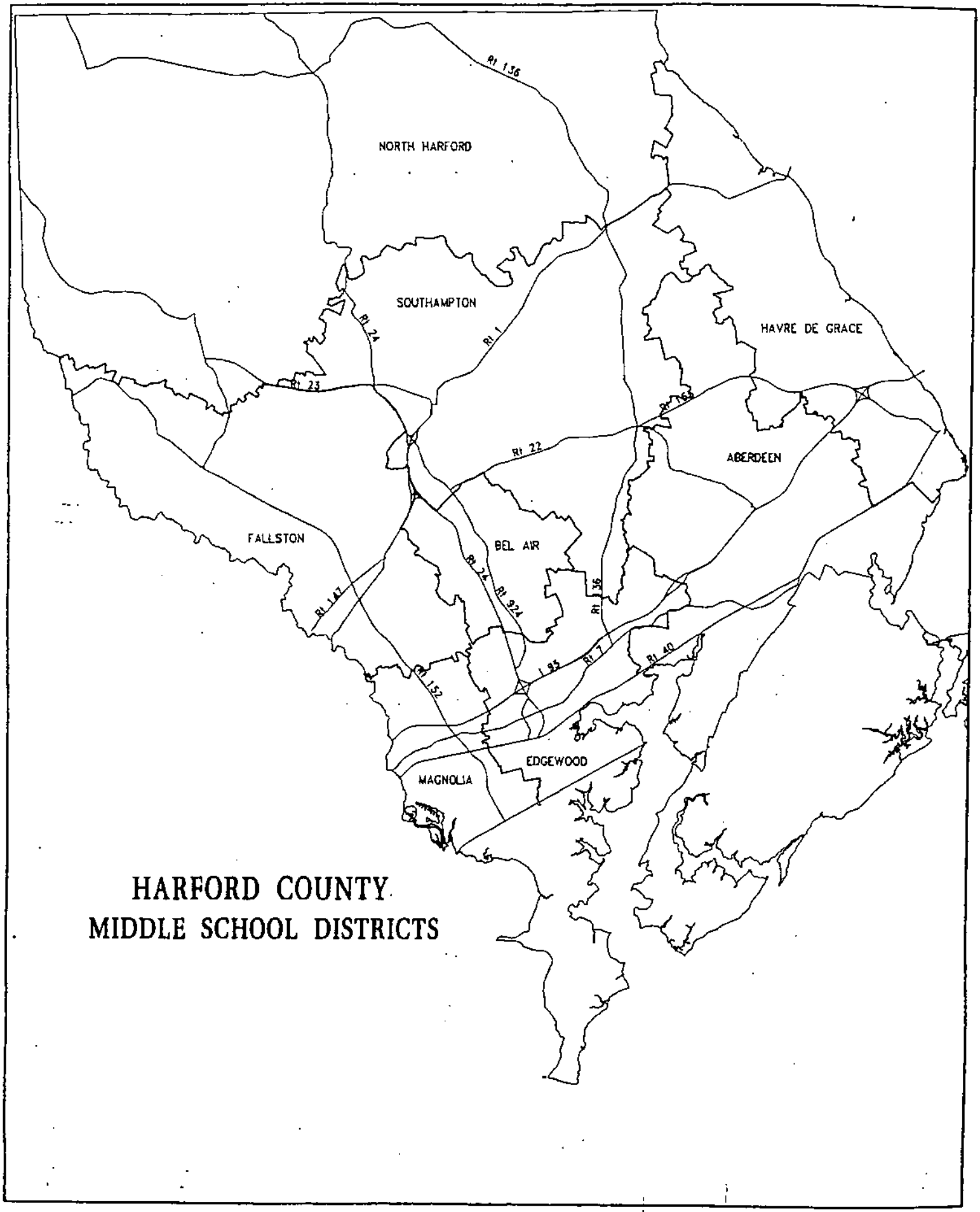
PUPIL YIELD FACTORS

Forty subdivisions were selected from various geographic locations throughout Harford County, to include single family dwellings, townhouse units, apartments/condominium units, and mobile home units. The subdivisions selected represented newly constructed and established subdivisions ranging in size from 28 units to 2,423 units. Additionally, subdivisions were selected to provide a broad range of attendance areas across the County. A count was made of each student who resided in each of the forty subdivisions studied. The data were tabulated by unit type, and the specific pupil yields were calculated for each subdivision in the elementary, middle, and high schools.

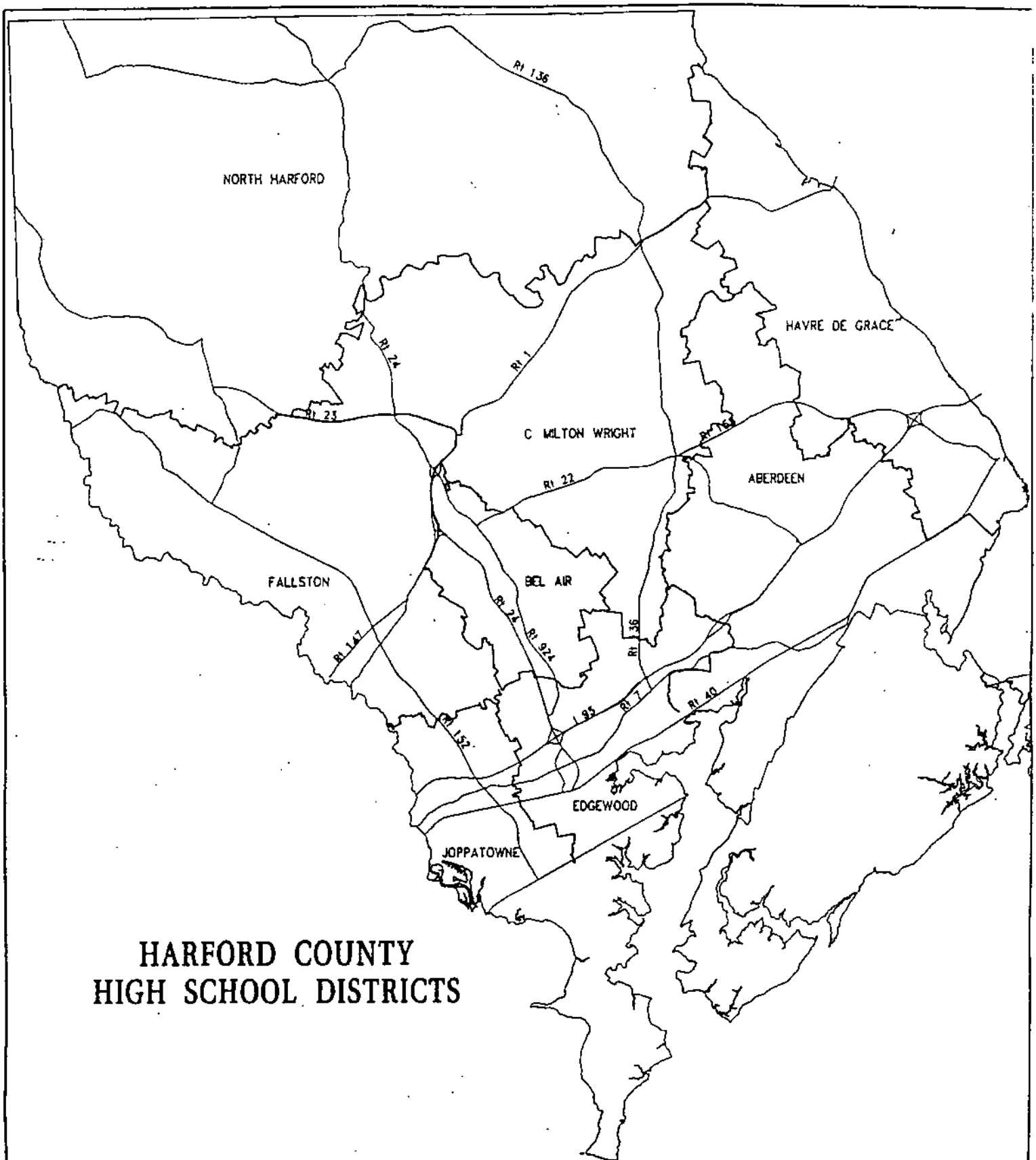
	GRADES		
UNIT TYPE	**K-5**	**6-8**	**9-12**
Single Family	.31	.17	.18
Townhome	.25	.09	.09
Apartments (2 Bdrms)	.09	.04	.04
Condo (2+ Bdrms)	.09	.04	.04
Mobile Home	.13	.05	.07



HARFORD COUNTY
ELEMENTARY SCHOOL DISTRICTS



HARFORD COUNTY
MIDDLE SCHOOL DISTRICTS



HARFORD COUNTY
HIGH SCHOOL DISTRICTS