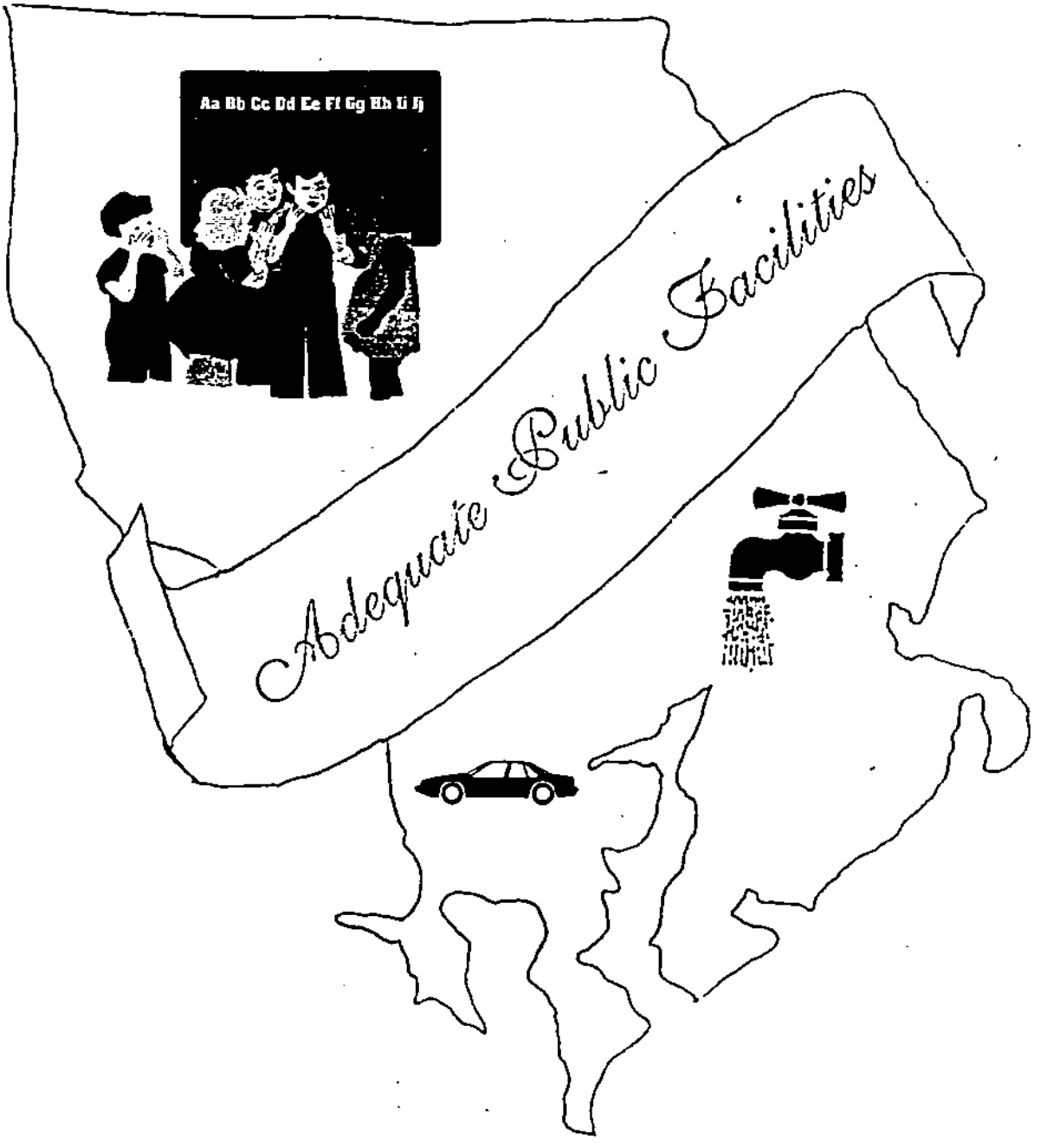
1998 Annual Growth Report
Harford County, Maryland



Prepared by the Department of Planning and Zoning, May 1999.

The 1998 Annual Growth Report

Table of Contents

List of Tables

List of Tables Continued

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 rated capacity within 2 years.
Secondary Schools - 120 % of 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-nine of the 31 elementary schools meet this standard. The projected enrollment for the Abingdon Elementary School during the 1999/2000 school year is 766 for a utilization rate of 123 percent. State Planning funds have been approved for an addition to the Abingdon Elementary school facility. As occurred during the July 1, 1998 to June 30, 1999, 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, 1999.

The current enrollment for the Church Creek Elementary School during the 1998/99 school year is 717 for a utilization rate of 120 percent. State Planning funds have been approved for an addition to Church Creek Elementary school facility. 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, 1999.

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. All seventeen middle and high schools in Harford County now meet adequacy standards.

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 10.5 Million Gallons per Day (MGD) while the design capacity is 12.0 MGD for a total Average Reserve of 1.5 MGD (as of December, 1998). The County Water system's current average daily usage is 9.5 MGD with a peak day consumption of 14.5 MGD. The Water Treatment capacity is 19.1 MGD, leaving a total reserve of 9.6 MGD (as of December 1998). 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 1998 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 developments that generate 249 trips per day at the time of preliminary/site plan review.

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

> ***Inside the Development Envelopment:*** Level of Service (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:*** Level of Service (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 two 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 24 and MD 924 (Tollgate)
2. MD 152 and U.S. 1
3. MD 24 and Plumtree Road
4. MD 924 & Plumtree Road
5. MD 152 & Singer Road
6. MD 24 & Forest Valley Road
7. MD 152 & Hanson Road
8. Interstate 95 & MD 24

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
1994 - 1998

County	1994	1995	1996	1997	1998	Total	Percentage of Baltimore Regio
Harford County	1,847	1,616	1,929	1,695	1,704	8,791	15.1%
Anne Arundel County	3,197	3,307	2,996	2,930	3,822	16,252	28.0%
Baltimore City	257	366	596	183	152	1,554	2.7%
Baltimore County	3,862	2,649	2,443	3,199	3,695	15,848	27.4%
Carroll County	1,436	1,299	1,162	778	919	5,594	9.7%
Howard County	2,032	1,860	1,706	2,027	2,255	9,880	17.1%
Total	**12,631**	**11,097**	**10,832**	**10,812**	**12,547**	**57,919**	**100.0%**

Source: Harford County Department of Planning and Zoning and Baltimore Metropolitan Council, March, 1999.

Table 2

Harford County - Baltimore Region
Population and Household Projections
1998 - 2008

County	1998 Population	1998 Households	2003 Population	2003 Households	2008 Population	2008 Households
Harford County	219,600	78,460	234,340	85,540	245,380	91,400
Anne Arundel County	472,000	170,740	492,680	183,540	507,120	193,660
Baltimore City	692,200	268,540	685,680	270,040	676,380	271,460
Baltimore County	723,380	295,600	735,720	306,900	745,740	314,020
Carroll County	145,580	51,340	156,380	56,240	170,100	62,220
Howard County	240,100	89,420	271,680	103,120	295,020	114,060
Total	**2,492,860**	**954,100**	**2,576,480**	**1,005,380**	**2,639,740**	**1,046,820**

Source: Harford County Department of Planning and Zoning and Baltimore Metropolitan Council, March, 1999.

Table 3
Baltimore Region
Employment Projections
1998 - 2008

County	1998 Employment	2003 Employment	2008 Employment
Harford	85,720	93,280	99,420
Anne Arundel	267,900	283,600	297,600
Baltimore City	455,320	459,960	464,320
Baltimore County	421,300	439,480	455,820
Carroll	60,040	64,200	67,840
Howard	133,320	147,360	158,100
Total	**1,423,600**	**1,487,880**	**1,543,100**

Source: Harford County Department of Planning and Zoning and Baltimore Metropolitan Council, March, 1999

Table 4

Harford County

Non - Residential Permit Activity

New Permits Valued $50,000 and Over

Permit Type	1994		1995		1996		1997		1998	
	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	24	158,683	22	371,664	24	389,119	27	1,164,384	36	502,761
Industrial	9	43,491	6	328,786	12	237,575	14	513,977	0	0
Institutional	7	22,385	6	40,546	10	196,839	8	70,821	8	145,025
Utilities	6	27,626	1	80	3	9,038	2	2,828	2	3,160
Other	2	36,922	1	7,542	4	15,092	3	17,698	2	134,338
	48	**289,107**	**36**	**748,618**	**53**	**847,663**	**54**	**1,769,708**	**48**	**785,284**

Source: Baltimore Metropolitan Council, March, 1999.

Table 5

Harford County

Non - Residential Permit Activity

Additions, Alterations, and Repairs Valued $50,000 and Over

Permit Type	1994		1995		1996		1997		1998	
	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	31	NA	39	NA	61	NA	49	NA	36	NA
Industrial	7	NA	16	NA	14	NA	5	NA	11	NA
Institutional	10	NA	12	NA	12	NA	14	NA	12	NA
Utilities	2	NA	0	NA	2	NA	5	NA	2	NA
Total	**50**		**67**		**89**		**73**		**61**	

NA: Data Not Available

Source: Baltimore Metropolitan Council, March, 1999.

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 rated capacity within 2 years
Secondary - 120% of 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-nine of the 31 elementary schools meet this standard. The projected enrollment for the Abingdon Elementary School during the 1999/2000 school year is 766 for a utilization rate of 123 percent. State Planning funds have been approved for an addition to the Abingdon Elementary school facility. As occurred during the July 1, 1998 to June 30, 1999, 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, 1999.

The current enrollment for the Church Creek Elementary School during the 1998/99 school year is 717 for a utilization rate of 120 percent. State Planning funds have been approved for an addition to Church Creek Elementary school facility. 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, 1999.

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. All seventeen middle and high schools in Harford County now meet adequacy standards.

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

1998

		Actual		Projected					
		1998 - 1999		1999 - 2000		2000 - 2001		2001 - 2002	
	CAPACITY	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.	ENROLL	% UTIL.
Abingdon	625	708	113%	766	123%	802	128%	829	133%
Bakerfield	500	440	88%	432	86%	426	85%	423	85%
Bel Air	525	598	114%	589	112%	583	111%	594	113%
Church Creek	600	717	120%	746	124%	759	127%	755	126%
Churchville	410	359	88%	358	87%	364	89%	377	92%
Darlington	200	161	81%	174	87%	192	96%	198	99%
Deerfield	550	541	98%	546	99%	535	97%	521	95%
Dublin	325	273	84%	265	82%	260	80%	256	79%
Edgewood	525	413	79%	417	79%	415	79%	419	80%
Emmorton	575	502	87%	514	89%	500	87%	477	83%
Forest Lakes	600	620	103%	650	108%	661	110%	658	110%
Fountain Green	600	570	95%	584	97%	613	102%	612	102%
G. Lisby at Hillsdale	475	409	86%	437	92%	452	95%	461	97%
Hall's Cross Rds	600	369	62%	351	59%	340	57%	325	54%
Havre de Grace	640	462	72%	457	71%	437	68%	431	67%
Hickory	700	733	105%	762	109%	798	114%	821	117%
Home/Wakefield	975	1,014	104%	1,028	105%	1,033	106%	1,027	105%
Jarrettsville	585	506	86%	504	86%	501	86%	476	81%
Joppatowne	520	480	92%	477	92%	474	91%	471	91%
Magnolia	525	576	110%	565	108%	557	106%	540	103%
Meadowvale	575	581	101%	568	99%	568	99%	547	95%
Norrisville	275	209	76%	214	78%	206	75%	193	70%
North Bend	575	506	88%	490	85%	483	84%	450	78%
North Harford	525	458	87%	451	86%	449	86%	437	83%
Prospect Mill	750	800	107%	793	106%	774	103%	751	100%
Ring Factory	600	595	99%	610	102%	634	106%	630	105%
Riverside	600	547	91%	539	90%	541	90%	525	88%
Roye-Williams	685	578	84%	544	79%	539	79%	505	74%
Wm Paca / Old Post Rd	1,035	948	92%	927	90%	900	87%	878	85%
Wm. S. James	575	572	99%	560	97%	553	96%	539	94%
Youth's Benefit	950	1,017	107%	1,009	106%	1,020	107%	1,033	109%
TOTAL	18,200	17,262	95%	17,327	95%	17,369	95%	17,159	94%

Source: Harford County Public Schools & Dept. of Planning & Zoning, October, 1998.

Table 7

Harford County Middle Schools

Utilization Chart

1998

		Actual		Projected							
		1998 - 1999		1999 - 2000		2000 - 2001		2001 - 2002		2002 - 2003	
MIDDLE SCHOOL	CAPACITY	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL	ENROLL	%UTIL
Aberdeen	1,673	1,233	74%	1,246	74%	1,289	77%	1,346	80%	1,348	81%
Bel Air	1,393	1,189	85%	1,229	88%	1,215	87%	1,269	91%	1,269	91%
Edgewood	1,438	1,114	77%	1,139	79%	1,161	81%	1,207	84%	1,208	84%
Fallston	1,058	1,154	109%	1,180	112%	1,204	114%	1,227	116%	1,229	116%
Havre de Grace	830	593	71%	603	73%	615	74%	634	76%	635	77%
Magnolia	1,135	881	78%	894	79%	907	80%	949	84%	949	84%
North Harford	1,380	1,059	77%	1,100	80%	1,081	78%	1,122	81%	1,124	81%
Southampton	1,598	1,771	111%	1,793	112%	1,805	113%	1,838	115%	1,840	115%
Total	10,505	8,994	86%	9,184	87%	9,277	88%	9,592	91%	9,602	91%

Source: Harford County Public Schools and Department of Planning and Zoning, October, 1998.

Table 8

Harford County High Schools
Utilization Chart
1998

HIGH SCHOOL	CAPACITY	Actual 1998 - 1999 ENROLL	Actual 1998 - 1999 %UTIL	Projected 1999 - 2000 ENROLL	Projected 1999 - 2000 %UTIL	Projected 2000 - 2001 ENROLL	Projected 2000 - 2001 %UTIL	Projected 2001 - 2002 ENROLL	Projected 2001 - 2002 %UTIL	2002 - 2003 ENROLL	2002 - 2003 %UTIL
Aberdeen	1,873	1,208	64%	1,203	64%	1,198	64%	1,237	66%	1,294	69%
Bel Air	1,483	1,525	103%	1,556	105%	1,597	108%	1,589	107%	1,597	108%
C. Milton Wright	1,650	1,646	100%	1,756	106%	1,805	109%	1,813	110%	1,826	111%
Edgewood	1,435	1,122	78%	1,125	78%	1,131	79%	1,179	82%	1,182	82%
Fallston	1,640	1,504	92%	1,572	96%	1,574	96%	1,614	98%	1,657	101%
* Harford Technical	1,038	877	84%	914	88%	973	94%	1,035	100%	1,079	104%
Havre de Grace	908	654	72%	658	72%	666	73%	692	76%	719	79%
Joppatowne	1,203	1,028	85%	1,038	86%	1,040	86%	1,016	84%	1,014	84%
North Harford	1,615	1,187	73%	1,202	74%	1,255	78%	1,274	79%	1,279	79%
*** Total**	12,845	10,793	84%	11,046	86%	11,253	88%	11,462	89%	11,657	91%
Total Secondary	23,350	19,787	85%	20,230	87%	20,530	88%	21,054	90%	21,259	91%

* Addition under construction.

Source: Harford County Public Schools and Department of Planning and Zoning, October, 1998.

Table 9

Harford County Residential Building Permit Activity
by Elementary School District
1994 - 1998

SCHOOL	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					1998 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	105	120	0	0	225	79	158	0	0	237	81	93	0	0	174	69	128	0	0	197	52	103	0	0	155
Bakerfield	11	5	0	1	17	20	31	0	0	51	14	55	0	0	69	31	10	0	2	43	33	23	0	1	57
Bel Air	5	0	0	0	5	7	0	0	0	7	8	0	0	1	9	26	16	0	0	42	67	66	0	0	133
Church Creek	10	50	10	1	71	11	39	0	0	50	41	48	116	0	205	33	1	1	1	36	9	5	4	0	18
Churchville	29	0	0	2	31	35	0	0	1	36	34	0	0	3	37	26	0	0	1	27	30	0	0	0	30
Darlington	5	0	0	2	7	6	0	0	4	10	15	0	0	4	19	14	0	0	3	17	14	0	0	3	17
Deerfield	45	0	0	0	45	18	0	0	0	18	39	0	0	0	39	38	0	0	0	38	31	0	0	0	31
Dublin	6	0	0	3	9	15	0	0	4	19	22	0	0	4	26	11	0	0	3	14	7	0	0	2	9
Edgewood	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Emmorton	60	38	0	0	98	35	42	0	0	77	38	49	0	0	87	13	19	0	0	32	20	0	0	0	20
Forest Hill	76	74	24	0	174	56	15	24	3	98	95	28	0	0	123	154	26	0	1	181	117	9	48	0	174
Fountain Green	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2	0	0	0	2
G. Lisby at Hillsdale	5	0	0	1	6	8	0	0	0	8	11	0	0	0	11	8	0	0	0	8	14	0	0	0	14
Hall's Cross Roads	7	0	0	0	7	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	18	0	0	18
Havre de Grace	4	0	10	0	14	0	0	1	1	2	2	0	16	0	18	1	0	0	0	1	7	0	0	0	7
Hickory	33	54	24	0	111	44	64	0	0	108	111	65	24	0	200	177	67	60	1	305	190	88	12	0	290
Homestead/Wakefield	55	37	53	0	145	53	4	50	0	107	54	18	35	0	107	38	1	0	0	39	58	7	0	0	65
Jarrettsville	25	0	0	2	27	21	0	0	2	23	20	0	0	1	21	15	0	0	0	15	22	0	0	1	23
Joppatowne	28	0	0	1	29	67	0	0	2	69	44	19	1	0	64	82	47	12	0	141	46	30	25	0	101
Magnolia	2	0	0	0	2	2	0	0	0	2	32	0	0	0	32	47	0	0	0	47	25	0	0	0	25
Meadowvale	84	0	24	2	110	78	12	6	0	96	90	23	48	2	163	2	0	0	2	4	41	20	0	2	63
Norrisville	9	0	1	0	10	8	0	0	1	9	12	0	0	2	14	15	0	0	2	17	26	0	0	5	31
North Bend	32	0	1	9	42	32	0	0	0	32	37	0	0	7	44	30	0	0	3	33	31	0	0	0	31
North Harford	29	0	0	2	31	34	0	0	7	41	46	0	0	5	51	32	0	0	7	39	38	0	2	3	43
Prospect Mill	96	58	36	0	190	68	24	0	1	93	89	0	0	0	89	58	0	41	0	99	85	0	42	0	127
Ring Factory	78	15	25	0	118	80	39	36	0	155	61	70	48	0	179	38	36	36	0	110	38	60	3	0	101
Riverside	0	0	0	1	1	3	0	0	0	3	14	0	0	0	14	8	0	0	0	8	9	0	0	0	9
Roye-Williams	0	0	0	1	1	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1
Wm. Paca/Old Post Rd	66	100	12	0	178	53	117	0	0	170	12	68	0	0	80	49	33	0	2	84	43	30	1	0	74
Wm. S. James	11	0	0	0	11	6	0	0	0	6	1	0	0	0	1	1	0	0	0	1	3	0	0	0	3
Youth's Benefit	40	0	0	1	41	39	0	0	0	39	52	0	0	0	52	92	0	0	0	92	91	0	0	1	92
TOTAL	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	1,150	459	137	19	1,765

Source: Harford County Dept. of Planning & Zoning, March, 1999.

KEY:

SF = Single Family Dwelling
TH = Townhouse
APT / CONDO = Apartment / Condominium
MH = Mobile Home

Table 10

Harford County Residential Building Permit Activity
by Middle School District
1994 - 1998

SCHOOL	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					1998 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	40	31	10	6	87	57	35	0	1	93	75	62	116	1	254	78	10	1	3	92	73	41	4	2	120
Bel Air	200	90	78	0	368	168	85	86	0	339	151	137	83	0	371	87	56	36	0	179	114	67	3	0	184
Edgewood	219	244	12	0	475	151	310	0	0	461	134	202	0	1	337	157	162	0	3	322	128	138	1	0	267
Fallston	85	74	24	1	184	81	15	24	1	121	118	28	0	0	146	199	26	0	0	225	129	9	36	1	175
Havre de Grace	93	0	34	4	131	84	12	7	5	108	106	23	64	6	199	17	0	0	5	22	61	20	0	5	86
Magnolia	30	0	0	2	32	72	0	0	2	74	90	19	1	0	110	137	47	12	0	196	80	30	25	0	135
North Harford	98	0	2	15	115	104	0	0	13	117	130	0	0	18	148	98	0	0	14	112	122	0	2	10	134
Southampton	194	112	60	1	367	172	88	0	4	264	272	65	24	3	364	337	83	101	3	524	443	154	66	1	664
TOTAL	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	1,150	459	137	19	1,765

Source: Harford County Department of Planning and Zoning, March, 1999.

KEY:

SF = Single Family Dwelling
TH = Townhouse
APT / CONDO = Apartment / Condominium
MH = Mobile Home

Table 11

Harford County Residential Building Permit Activity
by High School District
1994 - 1998

SCHOOL	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					1998 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	40	31	10	6	87	57	35	0	1	93	75	62	116	1	254	78	10	1	3	92	73	41	4	2	120
Bel Air	200	90	78	0	368	168	85	86	0	339	151	137	83	0	371	105	56	36	0	197	146	70	3	0	219
Edgewood	219	244	12	0	475	151	310	0	0	461	134	202	0	1	337	157	162	0	3	322	128	138	1	0	267
Fallston	99	80	48	1	228	93	22	24	1	140	136	74	24	0	234	223	61	60	0	344	159	39	60	1	259
Havre de Grace	93	0	34	4	131	84	12	7	5	108	106	23	64	6	199	17	0	0	5	22	61	20	0	5	86
Joppatowne	30	0	0	2	32	72	0	0	2	74	90	19	1	0	110	137	47	12	0	196	80	30	25	0	135
North Harford	98	0	2	15	115	104	0	0	13	117	130	0	0	18	148	98	0	0	14	112	122	0	2	10	134
C. Milton Wright	180	106	36	1	323	160	81	0	4	245	254	19	0	3	276	295	48	41	3	387	381	121	42	1	545
TOTAL	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	1,150	459	137	19	1,765

Source: Harford County Department of Planning and Zoning, March, 1999.

KEY:

SF = Single Family Dwelling
TH = Townhouse
APT / CONDO = Apartment / Condominium
MH = Mobile Home

Table 12

Harford County
Population and Households
by Elementary School District

1994 - 1998

SCHOOL	1994 *		1995 *		1996*		1997*		1998*	
	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households
Abingdon	9,287	3,262	9,890	3,483	10,485	3,712	11,212	3,969	11,658	4,157
Bakerfield	7,653	2,688	7,700	2,711	7,807	2,764	7,958	2,818	8,017	2,858
Bel Air	9,794	3,440	9,802	3,452	9,780	3,462	9,770	3,459	9,814	3,499
Churchville	5,848	2,054	6,045	2,129	6,159	2,180	6,678	2,364	6,727	2,398
Church Creek	7,623	2,677	7,708	2,714	7,775	2,752	7,849	2,779	7,866	2,804
Darlington	2,205	775	2,241	789	2,267	803	2,279	807	2,309	823
Deerfield	5,572	1,957	5,700	2,007	5,729	2,028	5,800	2,054	5,861	2,090
Dublin	3,816	1,341	3,852	1,356	3,894	1,378	3,930	1,391	3,940	1,405
Edgewood	4,837	1,699	4,852	1,708	4,837	1,712	4,804	1,701	4,770	1,701
Emmorton	4,429	1,556	4,704	1,656	4,897	1,734	5,103	1,807	5,152	1,837
Forest Hill	6,991	2,456	7,464	2,628	7,698	2,725	8,122	2,875	8,547	3,047
Fountain Green	5,989	2,104	5,998	2,112	5,977	2,116	5,943	2,104	5,907	2,106
G. Lisby at Hillsdale	5,370	1,887	5,394	1,899	5,398	1,911	5,394	1,910	5,378	1,917
Hall's Cross Roads	5,213	1,831	5,240	1,845	5,250	1,859	5,217	1,847	5,180	1,847
Havre de Grace	7,320	2,571	7,359	2,591	7,337	2,597	7,349	2,602	7,300	2,603
Hickory	6,232	2,189	6,536	2,302	6,803	2,408	7,327	2,594	8,089	2,884
Homestead/Wakefield	13,527	4,750	13,902	4,895	14,126	5,001	14,449	5,116	14,453	5,153
Jarrettsville	6,351	2,231	6,429	2,264	6,468	2,290	6,490	2,298	6,485	2,312
Joppatowne	8,284	2,909	8,361	2,944	8,513	3,014	8,651	3,063	8,966	3,197
Magnolia	4,092	1,438	4,109	1,447	4,104	1,453	4,151	1,470	4,247	1,514
Meadowvale	7,153	2,512	7,452	2,624	7,681	2,719	8,135	2,880	8,090	2,884
Norrisville	2,218	780	2,262	796	2,285	809	2,292	812	2,322	828
North Bend	5,550	1,950	5,670	1,997	5,737	2,031	5,822	2,061	5,869	2,092
North Harford	5,480	1,925	5,571	1,962	5,662	2,004	5,760	2,039	5,824	2,076
Prospect Mill	6,512	2,287	7,029	2,475	7,253	2,567	7,648	2,708	7,858	2,802
Ring Factory	5,692	1,999	6,017	2,119	6,412	2,270	6,963	2,465	7,208	2,570
Riverside	8,959	3,146	8,959	3,155	8,931	3,161	8,934	3,163	8,893	3,171
Roye-Williams	4,810	1,690	4,822	1,698	4,810	1,703	4,779	1,692	4,746	1,692
Wm. Paca/Old Post Rd	9,232	3,242	9,708	3,419	10,124	3,584	10,488	3,713	10,639	3,793
Wm. S. James	4,361	1,532	4,402	1,550	4,406	1,560	4,375	1,549	4,347	1,550
Youth's Benefit	13,859	4,867	13,952	4,913	13,993	4,954	14,098	4,990	14,248	5,078
TOTAL	204,263	71,745	209,130	73,640	212,600	75,260	217,770	77,100	220,710	78,688

*Population as of April 1.

Source: Harford County Dept. of Planning & Zoning, May, 1999.

Table 13

Harford County
Population and Households
by Middle School District

1994 - 1998

SCHOOL	1994 *		1995 *		1996 *		1997 *		1998 *	
	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households
Aberdeen	32,976	11,582	33,285	11,705	33,393	11,821	34,070	12,062	34,078	12,150
Bel Air	26,211	9,206	27,173	9,556	27,903	9,878	28,896	10,230	29,172	10,401
Edgewood	29,340	10,305	30,721	10,853	31,981	11,321	32,881	11,641	33,510	11,947
Fallston	20,832	7,317	21,302	7,491	21,554	7,630	21,943	7,769	22,390	7,982
Havre de Grace	16,675	5,857	17,009	5,981	17,186	6,084	17,718	6,273	17,654	6,294
Magnolia	21,618	7,593	21,678	7,623	21,733	7,694	22,026	7,798	22,395	7,984
North Harford	22,220	7,805	22,504	7,914	22,669	8,025	23,064	8,166	23,202	8,272
Southampton	34,391	12,080	35,458	12,517	36,181	12,807	37,172	13,161	38,309	13,658
TOTAL	204,263	71,745	209,130	73,640	212,600	75,260	217,770	77,100	220,710	78,688

* Population as of April 1

* Source: Harford County Department of Planning and Zoning, March, 1999.

Table 14

Harford County
Population and Households
by High School District

1994 - 1998

SCHOOL	1994 *		1995 *		1996 *		1997 *		1998 *	
	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households
Aberdeen	32,976	11,582	33,285	11,705	33,393	11,821	34,070	12,062	34,078	12,150
Bel Air	33,147	11,642	34,100	11,992	34,784	12,314	35,777	12,666	36,053	12,854
Edgewood	29,340	10,305	30,721	10,853	31,981	11,321	32,881	11,641	33,510	11,947
Fallston	23,382	8,212	23,969	8,429	24,254	8,586	24,879	8,808	25,623	9,135
Havre de Grace	16,675	5,857	17,009	5,981	17,186	6,084	17,718	6,273	17,654	6,294
Joppatowne	21,618	7,593	21,678	7,623	21,733	7,694	22,026	7,798	22,395	7,984
North Harford	22,220	7,805	22,504	7,914	22,669	8,025	23,064	8,166	23,202	8,272
C. Milton Wright	24,905	8,749	25,864	9,143	26,600	9,415	27,355	9,686	28,195	10,052
TOTAL	204,263	71,745	209,130	73,640	212,600	75,260	217,770	77,100	220,710	78,688

* Population as of April 1

* Source: Harford County Department of Planning and Zoning, March, 1999.

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 "1998 Water and Sewer Adequate Public Facilities Report," and can be found on pages 24 - 27 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 1998, the County's average day and maximum day demands were 9.5 MGD and 14.5 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 1998 Water and Sewer Adequate Public Facilities Report.

The average daily influent flow to the Sod Run WWTP in 1998 was approximately 10.5 MGD, exclusive of recycle flows and septage. The average daily influent flow to the Joppatowne WWTP in 1998 was approximately 0.902 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 1998
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.

	1998
Total Number of Connections	32,307
WATER	
Water Average Consumption	9.5 MGD
Water Peak Day Consumption	14.5 MGD
Average Water Usage per Connection (gal/day)	322
Residential Unit Water Usage (gal/day)	178
Average Commercial/Industrial Water Usage (gal/day)	3,862
SEWAGE	
Sewage Average Flows	11.4 MGD
Sewage Peak Day Flows	21.9 MGD
Average Sewage per Connection (gal/day)	373
Residential Sewage Generation (gal/day)	178
Average Commercial/Industrial Sewage Generation (gal/day)	3,862

* 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	1998	2000	2005	2010	2015	2020
FIRST ZONE												
Avg. Day, mgd	3.4	3.2	3.4	4.1	4.05	4.5	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	6.6	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	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	6.9	8.5	11.8	16.0	17.7	19.5
Aberdeen												
Avg. Day, mgd	0.0	0.0	0.0	0.5	.05	.03	.01	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	.05	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	.01	.01	.01	.01	.01	.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	0.5
Total												
Avg. Day, mgd	5.9	6.7	7.1	8.4	8.6	9.6	9.5	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	14.5	18.2	23.4	29.7	34.0	38.7

** - Allocated maximum day flow projections per 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
	1998	91,547	7,500	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
	1998	8.4	.71	.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
	1998	.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
	1998	1.6	.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
	1998	10.5	.90	.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
	1998	12.0	.95	.01
	2000	20.0	.95	.01
	2005	20.0	.95	.01
	2010	20.0	.95	.01

Table 18

1998 Existing Water & Sewer Capital Projects

The Capital Improvement Program establishes projects for expanding water and sewer facilities. This list of 1998 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
6458	Lower Bynum Run Parallel Interceptor	Phase 1: Construction Complete Phase 2: Under Construction Phase 3: Under design & Awaiting Rights-of-Way
6459	Bush Creek Sewage P.S. II	Construction completed
6486	Whiteford - Cardiff Sewer Petition	Under design & Awaiting Rights-of-Way
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	Construction completed
6510	Abingdon Rd. Water Trans. Main IV	Construction completed
6516	Laurel Bush Rd. Water Trans. Main	Construction completed
6521	Boulton St. & Tollgate Rd. Trans. Main	Under design & Awaiting Rights-of-Way
6540	Country Walk Tank & Booster Station	Design completed
6547	Underwood Lane Sewer Petition	Design completed
6553	Upper Lake Fanny Sewer Petition	Under design & Awaiting Rights-of-Way
6559	Old Emmorton Road Sewer Petition	Construction completed
6563	Fox Bow Pumping Station	Design completed
6564	Forest Lakes Elevated Water Storage Tank	Construction completed
6565	Fallston Fire Storage & Booster Station	Under construction
6568	Magnolia Water Booster Station	Construction completed
6575	Tollgate Rd & Plumtree Rd Water	Under design
6581	Sod Run Interceptor Sewer Parallel Ph. I	Design completed
6582	Bynum Run Collector Section III	Design completed
6591	Perryman Well Field Improvements	Defining scope
	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

1998

Intersection	Level of Service (Peak Hour)	Delay in Seconds (P.M.)
MD 24 and Bel Air South Parkway	D	36.4
MD 7 and U.S. 40	D	27.9
MD 24 and MD 924 (Tollgate)	F	>60
MD 24 and Ring Factory Road	D	28.5
MD 543 and U.S. 1	C	24.6
MD 924 and Abingdon Road	D	34.2
MD 22 and MD 136	C	19.0
MD 924 and Moores Mill Road	C	20.1
MD 24 and MD 755 (south)	B	11.7
MD 22 and Brierhill Road	B	14.9
MD 543 and MD 22	D	25.4
MD 24 and Trimble Road	D	30.1
MD 136 and MD 165	B	7.4
MD 152 and U.S. 1	F	>60
MD 24 and U.S. 1	D	40.0
MD 152 & Trimble Road	D	29.0
MD 24 and Jarrettsville Road	C	18.1
MD 543 and Wheel Road	B	11.5

Table 20

Unsignalized Intersection Capacity Analysis

Existing Conditions

1998

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

* MD 24 and Plumtree Road is now a signalized intersection.

Table 21

Average Daily Count Locations - 1998

Road Name	Location	Average Weekday Daily Count
Abingdon Road	North of I-95	7,372
Beards Hill Road	North of Churchville Road	10,566
Chapel Road	North of I-95	1,692
Hanson Road	South of Silverbell Road	3,208
Jarrettsville Road	East of Maryland 24	7,168
MD 152	South of U.S. 1	21,850
MD 24	North of Singer Road	40,675
MD 543	South of MD 22	14,725
Moores Mill Road	West of Old English Court	8,588
Moores Mill Road	West of Coconut Court	10,400
Pleasantville Road	North of Putnam Road	2,516
Trimble Road	East of MD 24	5,829
U.S. 1	North of MD 152	24,125
U.S. 40	North of MD 24	19,210
Stepney Road	North of I-95, South of Carsins Run	1,303
Ring Factory Road	West of MD 24	4,222
Singer Road	East of MD 24	9,720
Singer Road	West of MD 24	10,992
MD 7	West of MD 24	7,257
Hanson Road	West of MD 24	11,329
Ring Factory Road	East of MD 24	7,190
Plumtree Road	East of MD 24	3,764
Trimble Road	West of MD 24	6,342

Table 22

List of Approved County Capital Projects

Funded for Construction in FY 99

Aldino - Stepney Road Bridge	Reconstruction
Bridge Inspection Program	Inspection
Bridge Painting	Rehabilitation
Bridge Rehabilitation	Rehabilitation
Bridge Scour Repairs	Rehabilitation
Forge Hill Road Bridge	Replacement
Joppa Farm Road Bridge	Replacement
Moores Mill Road Bridge	Replacement
Nobles Mill Road Bridge	Rehabilitation
Singer Road Bridge	Replacement
Tollgate Road Culvert	Replacement

Table 23

State Consolidated Transportation Program

Funded for Construction in FY 99

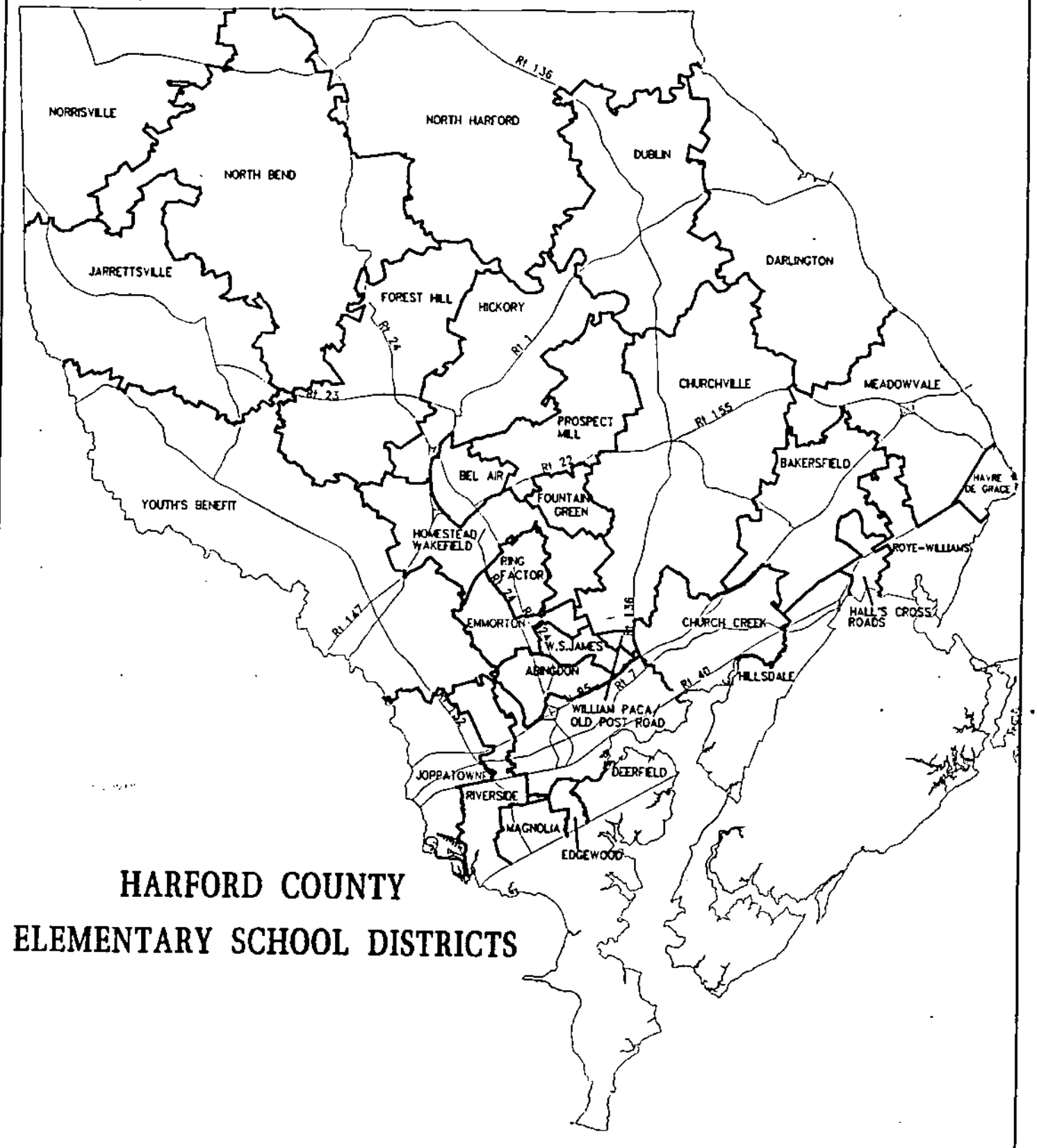
U.S. 1 / Bel Air Bypass	Construct Auxillary Lanes
MD 623 / Flintville Road Bridge	Replacement
Vietnam Veterans Memorial Highway at MD 24, MD 924, and Tollgate Road	Construct Additional Lane
MA and PA Heritage Corridor (Phase 1); Bel Air area, between Tollgate Road and Main Street	Hiker / Biker Trail
Churchville Road at Bynum Run Park	Construct Ridesharing Facility
Maryland 924 and Tollgate Road	Construct Additional Lane
Norrisville Road from Maryland 165 to Maryland 146	Resurfacing
East - West Highway from High Point Rd to Maryland 165	Resurfacing
Dublin Road east of Scarboro Road to Maryland 165	Resurfacing
Castleton Road from Maryland 161 to Flintville Road	Resurfacing

APPENDIX

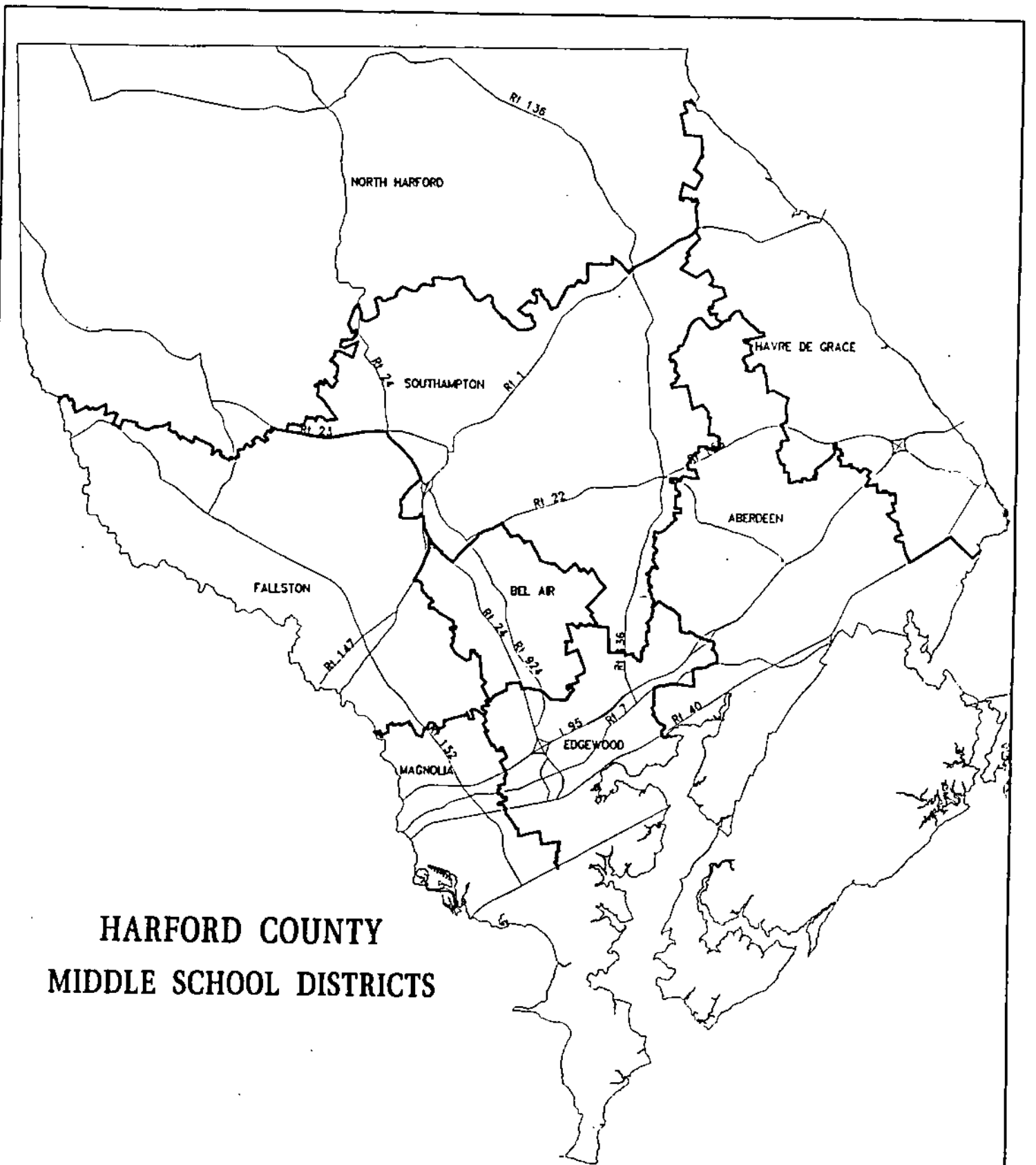
PUPIL YIELD FACTORS

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.

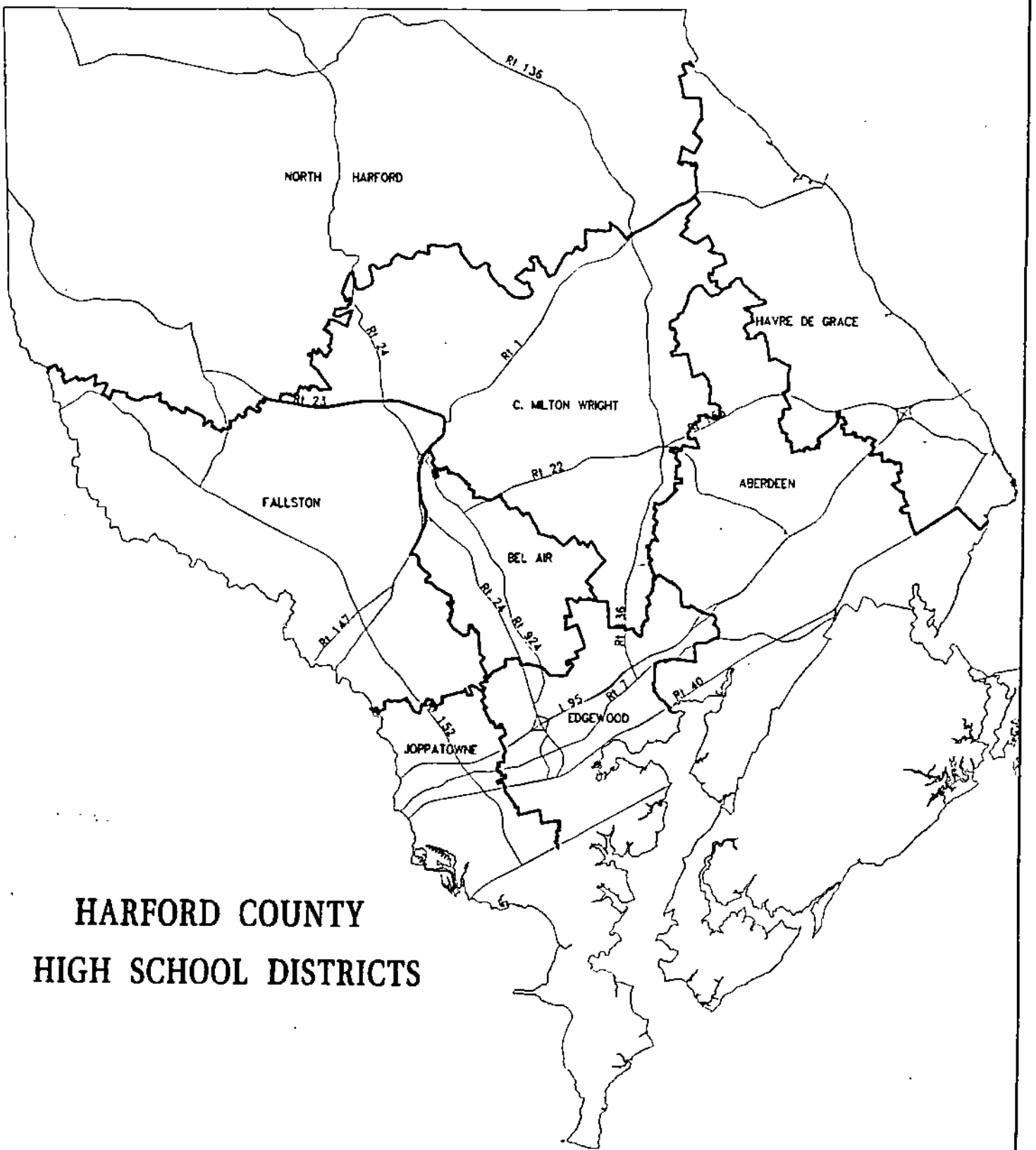
	GRADES		
UNIT TYPE	**K-5**	**6-8**	**9-12**
Single Family	.31	.17	.18
Townhome	.25	.09	.09
Apartments (2 Bdrms)	.09	.04	.04
Condo (2+ Bdrms)	.09	.04	.04
Mobile Home	.13	.05	.07



HARFORD COUNTY
ELEMENTARY SCHOOL DISTRICTS



HARFORD COUNTY
MIDDLE SCHOOL DISTRICTS



HARFORD COUNTY
HIGH SCHOOL DISTRICTS