

## **6. COMMUNITY FACILITIES PLAN**

### **6.1 Introduction**

Community facilities are those which serve a public or semi-public function and help give a community much of its sense of identity. Public facilities include government offices, water and sewerage systems, schools, parks, libraries, senior centers, police facilities and other services. Semi-public facilities include fire companies, churches, cemeteries and the like. Map 8 indicates the location of key community facilities in the Manchester area.

### **6.2 Public Water System**

#### **a. Existing Facilities**

The Town of Manchester owns and operates the public water system, which limits service to areas within the corporate boundary, with few exceptions. The existing and planned water service area within the Town currently covers approximately 1,152 acres and in the unincorporated area an additional 597 acres are located in the planned water service area for a total of 1,749 acres. Annexation is a prerequisite for public water service to the Town's water system for the 597 acres referenced above. Map 9 shows the approximate location of existing public wells and springs and their recharge areas in relation to the Planned Water Service Area.

The system is currently supplied by four wells and one spring. Water is treated at each well pumping station, and at the spring pumping station, and is then pumped into the system. Treatment consists of chlorination at all five pumps for disinfection and soda ash is also added for pH control at all five pumping stations.

A 150,000-gallon elevated storage tank located on York Street at the northeast end of Town is being replaced with a 500,000-gallon storage tank at the same site. When operational, the old 150,000-gallon tank will be removed. A second elevated storage tank, with a capacity of 100,000 gallons, is located on Park Avenue near Hilltop Drive in the western part of Town. Additional storage is provided at the pumping stations located at the Walnut Spring by means of a cistern (48,000 gallons).

The water distribution lines are metered and comprised primarily of 8-inch diameter pipes (approximately three-quarters of the mains), and 6-inch diameter pipes (approximately one-quarter of the mains). In addition, there is a small amount of 4-inch pipe still in use.

For additional details pertaining to the Manchester water system, please see Map W-3 of the County Master Plan for Water and Sewerage, as amended.

#### **b. Planning Considerations**

The Town has relied on groundwater sources to serve new development. This is accomplished primarily by developing new wells as development takes place. The Town requires developers to provide sufficient water to the site, or pay a water replacement fee in lieu of well development for each equivalent dwelling or commercial unit.

community facilities map

(not available on Internet)

public water service area map

(not available on Internet)

The following table gives the average gallons per day(GPD) used for the years 1982 through 1996.

<b>TABLE 6</b>	
<b>WATER USAGE TREND</b>	
<b>Year</b>	<b>Average GPD</b>
1982	162,906
1983	165,763
1984	197,072
1985	204,150
1986	226,210
1987	246,650
1988	252,685
1989	251,564
1990	258,289
1991	252,954
1992	251,119
1993	221,530
1994	219,549
1995	208,279
1996	208,111

Source:

**c. Available Groundwater Supply**

To determine the quantity and quality of groundwater resources available for use, the County contracted R.E. Wright Associates, Inc., to conduct a study of all the Community Planning Areas in the County, including the Manchester CPA. In May 1988, the consultant completed the Carroll County Water Resources Study. Map 9 shows the approximate location of the primary optimum (potential) well sites in Manchester and environs, as identified in the Wright study.

R.E. Wright Associates, Inc., estimated that the **maximum** amount of groundwater available to the Manchester area for development is 2,480,000 gpd. This is based on the estimated drought year recharge rate available within the Community Planning Area (1,480,000 gpd) plus an area extending roughly 2,000 feet beyond the then CPA boundary (another 1,000,000 gpd). This is based on groundwater recharge rates which do not take into account areas of groundwater that may have water quality or other problems. In addition, it is recognized that there are physical (and other) constraints which may prevent developing groundwater resources to their fullest potential.

More recently the Town hired the consulting firm of Tatman and Lee in the spring of 1994 to study its existing and future water supply sources in light of new regulations since the Wright study. This more recent study assessed the quantity and quality of existing water supplies and evaluated the disposition of the Town's springs. Also a hydraulic model of the Town's entire system was developed along with a 15-year projection for the amount of water storage needed. The Town is using this study as a guide for developing new wells for future growth in and around the Town and for developing capital improvements to the system.

**d. Revisions to the Planned Public Water Service Area**

The public water service area was re-evaluated as part of the 1997 revision of this comprehensive plan and amendment of the County Master Plan for Water and Sewerage. This review resulted in modifications to the limits of the Planned Public Water Service Area as shown on Map 9. The changes from the prior plan are indicated on Map 10. Features of the revised water service area are as follows:

- Overall the Planned Water Service Area has been reduced in size. The reduction has occurred primarily in the southeast quadrant of the current Manchester Water Service Area.
- Generally, where there is to be no water service, there is likewise to be no sewer service.
- Those areas planned for public sewer service are also planned to receive public water, as was the case with the 1991 Comprehensive Plan for Manchester and Environs. However, not all areas planned for public water are planned for public sewer service.
- Despite the fact that the Planned Water Service Area indicated on the 1991 Plan is being reduced in size, the Town faces substantial financial challenges to the operation and future expansion of its water system. As a result, the Town is committing to major capital improvements to the water system as part of the Town capital improvement program.

For more detailed information and delineation of the Planned Public Water Service Area, please refer to the Comprehensive Plan map, and the County Water Master Plan for Water and Sewerage.

**e. Future Water Demand**

Development of the 1991 Plan and the subsequent 1997 revisions required looking at the long-range needs of Manchester and environs, and projecting its future water demands. In order to project future demands for public water, a number of basic assumptions were first necessary. These assumptions include the following:

- \* Public water service will only be extended to land within the limits of the Planned Public Water Service Area (see Map 9);

- \* Maximum development densities will occur in accordance with the Land Use Plan;
- \* Development time frames are compressed to indicate total build-out in the foreseeable future;
- \* Public water service will be extended gradually over time when annexation occurs and development is approved by the Town in the Planned Water Service Area;
- \* All residential land use designations, except for Low Density (R-40,000), will eventually be served by public water;
- \* Commercial enterprises and land uses will generally be served by public water;
- \* Unincorporated properties located inside the Planned Public Water Service Area will eventually be annexed into the Town at the time of development, or if already developed, at the time there is a need to do so;
- \* Residential water use will be figured at 100 gallons per capita daily (gpcd) **for facility planning purposes**;
- \* Commercial water use will be figured at 700 gallons per acre daily (gpac) **for facility planning purposes**;
- \* The ratio of Maximum Day Demand to Average Day Demand will equal 1.25. This multiplier is used to gauge the demand for the few days a year of highest, or peak, use.

**f. Theoretical Build-out of Manchester Water Service Area**

Table 7 details the acreage for the Planned Public Water Service Area by zoning district. Acreage where no water service is planned within the Community Planning Area (CPA) is also listed.

changes to prior water service area map

(not available on Internet)

**TABLE 7  
MANCHESTER AND ENVIRONS COMPREHENSIVE PLAN UPDATE  
PLANNED PUBLIC WATER AND SEWER SERVICE AREA BY ZONE - 1997 CPA**

Zoning Category	Acres				
	Planned Water & Sewer Service	Water Service Only	Sewer Service Only	No Service Planned	Grand Total
<u>Town of Manchester</u>					
R-7,500	57.57	0.00	0.00	0.00	57.57
R-10,000	248.22	0.00	0.00	0.00	248.22
R-15,000	229.72	1.63	0.00	0.00	231.35
R-20,000	132.66	100.8	0.00	0.00	233.46
R-40,000	0.00	78.88	0.00	0.00	78.88
BL	71.66	0.00	0.00	2.92	74.58
BG	13.85	0.00	0.00	0.00	13.85
OP	16.92	0.00	0.00	0.00	16.92
Conservation	88.38	31.36	0.00	100.24	219.98
Roads	59.20	21.58	0.00	0.61	81.39
<b>TOTAL</b>	<b>918.18</b>	<b>234.25</b>	<b>0.00</b>	<b>103.77</b>	<b>1,256.20</b>
<u>Unincorporated Area</u>					
R-7,500	0.00	0.00	0.00	0.00	0.00
R-10,000	37.95	0.00	0.00	0.00	37.95
R-20,000	213.23	74.49	0.00	0.00	287.72
R-40,000	14.36	88.57	0.00	942.9	1,045.83
BL	8.17	0.00	0.00	0.00	8.17
BG	3.18	1.35	0.00	48.06	52.59
IR	32.30	0.00	0.00	0.00	32.30
Conservation	112.88	0.00	0.00	552.04	664.92
Agriculture	0.00	0.00	0.00	0.00	0.00
Roads	6.32	4.05	0.00	83.49	93.86
<b>TOTAL</b>	<b>428.39</b>	<b>168.46</b>	<b>0.00</b>	<b>1,626.49</b>	<b>2,223.34</b>
<b>GRAND TOTAL</b>	<b>1,346.57</b>	<b>402.71</b>	<b>0.00</b>	<b>1,730.26</b>	<b>3,479.54</b>

Source: Carroll County Department of Planning and Development

Assuming the “average yield-dwelling units per acre” multipliers in Table 3, the 100 gallons per capita daily multiplier, the 700 gallons per day per acre commercial water use multiplier, the “number of persons per dwelling unit multiplier” of 2.9 for the Town and unincorporated environs, a theoretical projection of water demand at build-out is made on Table 8.

For estimating and facility planning purposes, the higher 2.9 multiplier for the “number of persons per dwelling unit” is applied to the incorporated areas, as well as the currently unincorporated areas already served or planned to be served with water upon annexation. At build-out, the average population per dwelling unit figure is anticipated to be less than 2.9 and closer to the 2.35 figure characteristic of older development in Town. The difference contributes to an intended safe margin. Therefore, while the .8 mgd average day demand total of this theoretical build-out of the water service area in Table 8 is high by assuming 100% lot yields from “dwelling unit per acre” multipliers and the higher 2.9 persons per dwelling acre multiplier, this .8 mgd figure is nearly a .5 mgd reduction from the 1.3 mgd average day demand figure of the 1991 Plan. Further, assuming the Maximum Day Demand equals the Average Day Demand times 1.25 or 1 mgd (the few days in the year when demand hits its highest peaks), the figure is well below the 2.4 mgd drought-year recharge. It is estimated the theoretical build-out of the no service areas, which would depend indefinitely on individual wells, would not demand more than 250,000 gallons, and, in actuality, substantially less. This additional demand on the overall water budget is well within the 2.4 mgd drought-year recharge, which would not likely be fully developed for reasons noted earlier.

**g. Future Water Supply**

The Town of Manchester is continuing in its efforts to evaluate and develop groundwater resources. **This has become an increasingly difficult task. Surface water treatment rules which apply to springs have become more stringent and costly requiring replacement of springs with adequate production wells. Adequate production wells to meet demands are not easy to find. Once found and added to the system, wells must be continuously protected from contamination.** The Town requires developers to provide at least the amount of water necessary to serve their developments. If unable to meet that requirement, they may be able to provide a “fee in lieu” of the water. A long-range plan for the Manchester area includes water supply from the planned Union Mills Reservoir, located on Big Pipe Creek at Union Mills, as a supplement to groundwater resources. However, no reliance on that source can be made at this time or in the near future. To date, the County has purchased approximately 78 percent of the land required for the project. The long-range need to plan for this reservoir was recognized in the Carroll County Water Resources Study.

**The conservation and protection of existing and future groundwater supplies is critically important to Manchester. Continuing education and public relations on the proper use and care of septic systems, the need to conserve water, protect sensitive environmental resource areas, and implement water resource management practices, are essential to avoiding serious problems.**

**TABLE 8**  
**Theoretical Build-Out of Manchester Water Service Area - 1997 Plan**

<i>Zoning District</i>	<i>DU/AC*</i>	<i>Persons/ DU*</i>	<i>Acres</i>	<i>Population Equivalent</i>	<i>GPDC*</i>	<i>Average Day Demand</i>
<b>TOWN</b>						
R-7,500	4.2	2.9	58 =	706 x	100 =	70,600
R-10,000	2.8	2.9	248 =	2,014 x	100 =	201,376
R-15,000	2.1	2.9	231 =	1,407 x	100 =	140,700
R-20,000	1.4	2.9	233 =	946 x	100 =	94,600
R-40,000	.7	2.9	79 =	160 x	100 =	16,000
O-P			17	-- x	700 gpad* =	11,900
B-L			72	-- x	700 gpad* =	50,400
B-G			14	-- x	700 gpad* =	9,800
C	.2	2.9	120 =	70 x	100 =	7,000
<b>TOTAL</b>			1,072	5,343		602,376
<b>ENVIRONS</b>						
R-10,000	2.8	2.9	38 =	309 x	100 =	30,900
R-20,000	1.4	2.9	288 =	1,169 x	100 =	116,900
R-40,000	.7	2.9	103 =	209 x	100 =	20,900
B-L	--	--	8	-- x	700 gpad* =	5,600
B-G	--	--	5	-- x	700 gpad* =	3,500
I-R	--	--	32	-- x	700 gpad* =	22,400
C	.2	2.9	113 =	66 x	100 =	6,600
<b>TOTAL</b>			587	1,753		206,800
<b>GRAND TOTAL</b>			1,659	7,096		809,176

**Key:** DU/AC = Dwelling Units per Acre  
 Person/DU = Persons Per Dwelling Unit  
 GPCD = Gallons Per Capita Daily  
 gpad = Gallons Per Acre Daily

## **6.3 Public Sewer System**

### **a. Existing Facilities**

The Town of Manchester owns and operates the public sewerage system, which limits service to land within the corporate boundaries. Therefore, land planned to be serviced in the unincorporated environs will require annexation into the corporate limits to be served. The existing and planned service area comprises approximately 1,346 acres of which 918 acres (68%) are currently within the corporate limits and the balance, 428 acres (32%), is currently in the unincorporated environs. Map 11 shows the location of the wastewater treatment facility and the existing and planned pumping stations in relation to the Planned Sewer Service Area. (See also Map S-3 of the County Master Plan for Water and Sewerage, as amended.)

The existing sewerage system became operational in 1969 and consists of a collection system, nine pumping stations, and a sewage treatment plant located east of Beaver Street. A spray irrigation facility is also utilized in the waste treatment process, and is located south of Manchester on Maple Grove Road. Sewage flow is primarily domestic with a small amount of commercial waste.

The sewage treatment plant is a package secondary treatment facility utilizing contact stabilization with anaerobic digestion of sludge. The design capacity is 500,000 gpd (.500 mgd), with actual flows in 1996 averaging 282,000 gpd. Effluent from the treatment plant is pumped from the treatment plant via a 14" force main to a 5 million gallon storage lagoon, and in turn, spray irrigated onto farmland. The Town of Manchester currently utilizes and harvests a type of crop named Reed Canary Grass for nutrient uptake on the spray irrigation fields. The Town is allowed to spray irrigate March 1 thru November 30. For the remaining three months, December 1 through February 28, the plant's effluent is discharged into George's Run, which is a tributary of Prettyboy Reservoir in Baltimore County. The stabilized sludge which is generated at the facility is de-watered via a belt filter press. De-watered sludge cake is then transported to Carroll County Northern Landfill for disposal.

The Manchester Wastewater Treatment Plant also incorporates chemical addition in the form of liquid alum for the control of phosphorous. The phosphorous removal facility was first constructed on site in 1978, and rehabilitated in the Phase I upgrade in 1991.

The Town of Manchester Wastewater Treatment Plant Upgrade plans were approved in 1982. The planned upgrade was divided into three phases. Phase I, which was completed in 1991, which increased and doubled the total capacity of the plant to .500 mgd. It included the construction of an additional activated sludge tank, rehabilitation of existing activated sludge tank, mechanical bar screen, grit removal system, belt filter press, rehabilitation of the phosphorous removal facilities, and an ultra-violet disinfection system.

Phase II of the upgrade consisted of the construction of two wastewater pumping stations. This phase of the upgrade was started in June of 1991. This phase of the project included the construction of a new wastewater pumping station at the south end of the town, at Route 30 and Maple Grove Road. The second station was constructed at the north end of town, at Route 30 and Michelle Road. This phase also included the installation of a 10" force main from both stations. When this construction was completed, the wastewater pumping station designated the Rohrbaugh Station, was bypassed and

abandoned, and a section of 8" gravity line was installed and flow is now handled by the station at Route 30 and Michelle Road.

**b. Planning Considerations**

\* The planned public sewer service area limits of the 1991 Plan were predicated on the ultimate expansion of the Manchester Wastewater Treatment Facility to 1 mgd. Physical and financial constraints have resulted in a determination to not pursue an expansion of the Wastewater Treatment Facility, but to plan instead to make do with the .5 mgd facility capacity. This determination and the 1997 Plan revision are consistent with the goal of maintaining Manchester's historic small-town identity while at the same time accommodating and carefully planning for anticipated new development. As a result, the limits of the planned sewer service area have been reviewed and necessarily scaled back accordingly as detailed on the Comprehensive Plan Map and Map S-3 of the County Master Plan for Water and Sewerage. The revised planned public water and sewer service area limits remain indicative of the planned future corporate limits. For the Town, it is essential that the future corporate limits reflect the existing physical and financial capacities and limitations of the Town water and sewerage facilities. As a result, necessary corresponding adjustments in land use designations have been made.

\* The planned alignment for the Manchester Bypass (MD Relocated) bisects the spray field and is anticipated to remove approximately 12 acres from the operation, which the State will need to replace at the appropriate time prior to road construction.

\* The 1997 revisions and amendments to the Comprehensive Plan for Manchester have been affirmed as being in accordance with the *1984 Reservoir Watershed Management Agreement*, as amended, of which the Carroll County Commissioners are a signatory party.

**c. Features of Revised Manchester Sewer Service Area**

The Planned Sewer Service Area has been reduced in size. The changes from the prior plan are indicated on Map 12. The territory contained within its limits, approximately 1,346 acres (1,281 acres exclusive of roads), is anticipated to be accommodated by available capacity of the existing Manchester .5 mgd Wastewater Treatment Plant. When "build-out" of the sewer service area is reached, the wastewater treatment plant facility will be at or near capacity.

Currently, inflow and infiltration levels are quite high, however, the town anticipates making substantial reductions as part of the capital improvements program for 1997 and the following years. This improvement program will free up additional capacity in the sewer system which will be needed and essential to accommodate sewage flows from new connections to the system within the revised service area.

Factors determining placement of the revised service area included consideration of:

1. Previous infrastructure investments, i.e. sewage pumping stations constructed or on-line,
2. Groundwater resources of critical importance to the Town's water system and protection of the groundwater sources from failing septic systems,

3. The history of “on lot” systems for those developed areas of Manchester not served by the public sewage system, and the ability to accommodate replacement systems on-site given the general lot size in such areas,

public sewer service area map

(not available on Internet)

4. Related elements of the *Manchester and Environs Comprehensive Plan* and necessary amendments thereto as a result of Resolution of 5-96, and the Town's recent determination to make do with a wastewater treatment facility having a capacity of .5 mgd.

**d. Projecting Service Area Flow**

The *legal* capacity of a wastewater treatment facility may be finite. However, the sewage generated from a given service area, is not. It varies and is affected by several variables over time. As a result, when projecting future “flows” and tracking current flows through time, several variables have to be kept in mind when articulating the limits of a planned service area. Projecting sewage flows is more *art* than science due to key factors which do not remain constant. Projections made for the purpose of this Plan must be viewed in the context of the following:

- **Persons Per Dwelling Unit Variable**

Multipliers are used to make estimates and projections; for example, assigning an average number of persons per dwelling unit to project population and sewage flow from a dwelling unit, or assigning a multiplier to project sewage flow from an acre of commercial or industrial land. In the case of the former, the multiplier is derived from census data regarding family or household size. This varies from community to community and depends on birth rates and the age of the communities' population. The 1991 Plan used a multiplier of 2.35 persons per dwelling unit within the corporate limits and 2.9 persons per dwelling unit outside the corporate limits for *facility planning* purposes. For the purposes of the 1997 Plan, a 2.9 figure has been used straight across the board, to allow for a greater safety margin for facility planning purposes. At “build-out”, the average population per dwelling unit is anticipated to be less than 2.9 and therefore the actual sewage flow is expected to be less than projected with the difference contributing to an intended safety margin.

- **Land Use Type and Density Variable**

Land use designations on the *Manchester and Environs Comprehensive Plan* determine the basis for what land uses may occur. For example, residential use and the level of intensity of residential development are stipulated in the Plan as are designations for commercial use. Depending on the land use type, corresponding multipliers in the *Manchester and Environs Comprehensive Plan* are used to project density and/or sewage flows from any given designation. These multipliers, expressed in terms of units per acre or gallons per day per acre (depending on land use designation), are generally and intentionally optimistic in expectation of what may actually materialize at any given location, to again hedge toward a safety margin as the service area progresses toward “build-out”. Obviously, if and when these land use designations are changed, such changes can likewise affect both the projected and ultimate actual flows. For facility planning purposes, 100 is the multiplier for gallons per capita daily (gpcd), and 700 is the multiplier for commercial use for gallons per acre daily (gpac).

- **Topography and Buildable Areas Variable**

Depending on the geology of the area, slope of the land, amount of wetlands, configuration of the parcel and other site development constraints, actual development density (on the average) tends to be less intense than the maximum levels contemplated by any particular land use designation. While one parcel may develop at a density close to the maximum level, another parcel may fall far short, due to site constraints. This factor in the Manchester area, contributes to the safety margin.

- **Infiltration and Inflow Variable**

Groundwater leaking into a sewerage system or surface water flowing into the sewage system, will obviously take up and use part of the capacity of the system. Some infiltration and inflow (“I and I”) in a sewerage system is inevitable and the amount can fluctuate. In any case, it is important and necessary to continuously monitor and keep levels as low as possible so that available capacity in the sewerage system is not wasted. Manchester has an “I and I” incremental reduction project in its capital improvement program to significantly reduce current levels.

### **Summary of Variables**

Estimates or projections for future sewage flows generated from areas not developed or yet connected to the system, but within the service area, are intended and expected to be higher than actual flows. That is because density multipliers applied to undeveloped land for facility planning purposes project somewhat greater density than will typically will be achieved. This contributes to a safety margin given other variables i.e., fluctuating family size, age characteristics of the users of the system through time, site characteristics and lot yield, percentage of “I and I”, and variable types of land use. Abatement and continued management of “I and I” to target levels, is an important key to enable the service area to be serviced according to plan.

- e. **Sewer Demand and Theoretical Build-Out of the Manchester Sewer Service Area**

The acreage for the Planned Public Sewer Service Area by each land use designation is given in Table 9 as is the acreage where no sewer service is planned within the Community Planning Area (CPA).

Changes to prior sewer service area map

(not available on Internet)

**TABLE 9  
MANCHESTER AND ENVIRONS COMPREHENSIVE PLAN UPDATE  
PLANNED PUBLIC WATER AND SEWER SERVICE AREA BY ZONE - 1997 CPA**

Zoning Category	Acres				
	Planned Water & Sewer Service	Water Service Only	Sewer Service Only	No Service Planned	Grand Total
<u>Town of Manchester</u> R-7,500	57.57	0.00	0.00	0.00	57.57
R-10,000	248.22	0.00	0.00	0.00	248.22
R-15,000	229.72	1.63	0.00	0.00	231.35
R-20,000	132.66	100.80	0.00	0.00	233.46
R-40,000	0.00	78.88	0.00	0.00	78.88
BL	71.66	0.00	0.00	2.92	74.58
BG	13.85	0.00	0.00	0.00	13.85
OP	16.92	0.00	0.00	0.00	16.92
Conservation	88.38	31.36	0.00	100.24	219.98
Roads	59.20	21.58	0.00	0.61	81.39
<b>TOTAL</b>	<b>918.18</b>	<b>234.25</b>	<b>0.00</b>	<b>103.77</b>	<b>1,256.20</b>
<u>Unincorporated Area</u> R-7,500	0.00	0.00	0.00	0.00	0.00
R-10,000	37.95	0.00	0.00	0.00	37.95
R-20,000	213.23	74.49	0.00	0.00	287.72
R-40,000	14.36	88.57	0.00	942.90	1,045.83
BL	8.17	0.00	0.00	0.00	8.17
BG	3.18	1.35	0.00	48.06	52.59
IR	32.30	0.00	0.00	0.00	32.30
Conservation	112.88	0.00	0.00	552.04	664.92
Agriculture	0.00	0.00	0.00	0.00	0.00
Roads	6.32	4.05	0.00	83.49	93.86
<b>TOTAL</b>	<b>428.39</b>	<b>168.46</b>	<b>0.00</b>	<b>1,626.49</b>	<b>2,223.34</b>
<b>GRAND TOTAL</b>	<b>1,346.57</b>	<b>402.71</b>	<b>0.00</b>	<b>1,730.26</b>	<b>3,479.54</b>

Source: Carroll County Department of Planning and Development

Table 10 has been prepared to project future sewer demands based on the acreages in applicable categories of Table 9. Assuming the “average yield-dwelling units per acre” multipliers in Table 3, the 100 gallons per capita daily multiplier, the 700 gallons per acre per day commercial water use multiplier, and the “number of persons per dwelling unit” multiplier of 2.9, for the Town and unincorporated environs, a theoretical projection of sewer demand at build-out can be made from Table 10.

For estimating purposes, the higher 2.9 multiplier for the “number of persons per dwelling unit” is applied to the incorporated areas, as well as any currently unincorporated areas planned to be served with sewer service upon annexation. At “build-out” the average population per dwelling unit figure is anticipated to be less than 2.9 and closer to the 2.35 figure characteristic of older development in Town. Any difference will contribute to an intended safety margin. Table 10 also assumes 100% lot yields from the “dwelling unit per acre” multiplier which makes the projected flows higher than what will likely materialize when development actually occurs. Therefore, while the average day demand figure will be less than the theoretical .70 mgd projection from Table 10 below, it will not, nor can it be more than the legal capacity of the wastewater treatment facility which is .5 mgd. In terms of using available capacity in the sewerage system efficiently as the planned service area is serviced, and builds out, the control of infiltration and inflow (“I and P”) will be a major determinant. When considering the flows from the area currently built and served, and estimating future flows from the undeveloped areas of the planned service area and assuming that “I and P” will be controlled and maintained at minimal levels over time, the 1997 Planned Service Area is considered to be reasonably calibrated with the capacity of the system and the .5 mgd limit.

**f. Individual Sewerage Systems**

The "No Planned Service Area" is primarily intended for low density development which will be served by private septic systems. Permanent long-term dependence on underground sewerage disposal accentuates the need for thorough soils testing and evaluation prior to construction. **Proper installation, daily use and care, periodic maintenance, and sufficient replacement area are essential to provide adequately for these areas indefinitely. In the Manchester Community Planning Area, everyone’s potable drinking water supply depends on it. The Town can ill afford to have any of its wells taken off-line due to groundwater contamination from failing septic systems or other sources. Given a finite wastewater treatment capability, the Town must depend on those areas on individual systems where no public sewer is planned, to continue functioning properly and indefinitely; and, whenever possible, should an on-lot system fail, that it be replaced immediately with a new on-lot system.**

**TABLE 10**  
**Theoretical Build-Out of Manchester Sewer Service Area - 1997 Plan**

<i>Zoning District</i>	<i>DU/AC*</i>	<i>Persons/DU*</i>	<i>Acres</i>	<i>Population Equivalent</i>	<i>GPCD*</i>	<i>Average Day Demand</i>
<b>TOWN</b>						
R-7,500	4.2	2.9	58	706 x	100 =	70,600
R-10,000	2.8	2.9	248	2,014 x	100 =	201,376
R-15,000	2.1	2.9	230	1,401 x	100 =	140,070
R-20,000	1.4	2.9	133	540 x	100 =	53,998
R-40,000	.7	2.9	0	0 x	100 =	0
O-P	--	--	17	-- x	700 gpad*==	11,900
B-L	--	--	72	-- x	700 gpad*==	50,400
B-G	--	--	14	-- x	700 gpad*==	9,800
C	.2	2.9	88	51 x	100 =	5,100
<b>TOTAL</b>			860	4,712		543,244
<b>ENVIRONS</b>						
R-10,000	2.8	2.9	38	309 x	100 =	30,856
R-20,000	1.4	2.9	213	864 x	100 =	86,478
R-40,000	.7	2.9	14	28 x	100 =	2,842
B-L	--	--	8	-- x	700 gpad*==	5,600
B-G	--	--	3	-- x	700 gpad*==	2,100
O-P	--	--	32	-- x	700 gpad*==	22,400
C	.2	2.9	113	66 x	100 =	6,554
<b>TOTAL</b>			421	1,267		156,830
<b>GRAND TOTAL</b>			1,279	5,971		700,074

**Key:** DU/AC = Dwelling Units per Acre  
 Person/DU = Persons Per Dwelling Unit  
 GPCD = Gallons Per Capita Daily  
 gpad = Gallons Per Acre Daily

## **6.4 Educational Facilities**

### **a. Existing Facilities**

There are three public schools which serve the Manchester area: Manchester Elementary School, North Carroll Middle School, and North Carroll High School. The location of the first two schools, a future elementary and future high school site, are shown on Map 8. North Carroll High School, which serves the Manchester area, is located in the Town of Hampstead, to the south of the Manchester planning area.

Renovations at Manchester Elementary School, the only public school facility within the Manchester corporate limits, were completed in January 1990. The school, serving grades K-5, was first constructed as a high school in 1932 and was renovated and expanded in 1949 and 1953. The modernization/addition project, which began in 1987, included the demolition of the 1932 section, the partial demolition of the 1953 section, and the construction of two new classrooms and administrative wings connected by the 1949 gymnasium and cafeteria. The school contains 25 classrooms, and is sited on 18.79 acres of land. The K-5 capacity of the new facility is 700, with an additional Special Education capacity of 20, bringing the total capacity to 720 students.

Middle school age students (grades 6-8) in the Manchester area attend North Carroll Middle School, located approximately 1 mile south of Manchester on MD Route 30. Originally constructed as a high school in 1956, the facility was converted to a middle school during the 1974-75 school year and currently has a capacity of 900, with an additional Special Education capacity of 10, to bring the total capacity to 910 students. The County Capital Improvement Program for fiscal years 1998 to 2003 schedules the North Carroll Middle School for renovation in Fiscal Year 2002.

North Carroll High School serves students in grades 9-12 in the northeast attendance area. First constructed in 1976, with an addition built in 1986, the size of the building is 233,400 square feet on 52 acres on the west side of the Town of Hampstead. Currently, the capacity of the high school is 1,440 students. Due to the relatively young age of the structure, the school should continue to adequately serve the northeast attendance area for many years.

### **b. Planning Considerations**

\* The ability of the existing educational facilities to serve the northeast attendance area will continue to be monitored by the Carroll County Board of Education. In anticipation of needing additional capacity in the northeast attendance area, the Carroll County Public Schools Facilities Master Plan, had scheduled a new elementary school in the Manchester area for the late 1990's. Land for this school (20 acres) located north of Town was purchased in 1989. Likewise, sixty (60) acres of land for a future high school in the Manchester area was purchased in 1994. The future high school site is located on the south side of Town, not far from North Carroll Middle School, at the northwest corner of Rt. 30 and Cape Horn Road. (see Map 8).

\* Both sites were purchased well in advance of the need from the School Land Bank Account (established in the 1970's) by the County Commissioners, upon recommendation of the Carroll County

Planning Commission as part of the County's Capital Improvement Program. In the interim they are available to be used for recreational uses. Funding in the School Land Bank Account comes in part from development fees which also were first instituted in the mid-1970's.

\* The 1998 to 2003 Capital Improvement Program included a new project to enlarge the capacity of Spring Garden Elementary in Hampstead, thereby delaying, in the short term the construction of a second elementary school in Manchester. As Hampstead and its environs, along with Manchester and its environs, and the remainder of the northeast attendance area all progress toward build-out, the fourth elementary school will be required. The four (4) elementary schools will feed into two middle schools (North Carroll Middle and Hampstead Middle). They, in turn, will ultimately feed to their respective high schools.

\* The new Hampstead Area Middle and Special Education School is currently included in the 1998 to 2003 Capital Improvement Program for design in FY 1999 and construction in FY 2000.

## **6.5 Parks and Recreation Areas**

### **a. Existing Facilities**

The Manchester planning area is served by four public parks: Christmas Tree Park, North Carroll Community Pond, Pine Valley Park, and Westside Memorial Park. The location of the parks is shown on Map 8. Following is a brief summary of the park and recreational facilities:

#### **Christmas Tree Park**

Located east of Christmas Tree Park Lane at the eastern edge of Town, this 32-acre park provides two ball fields with lights, three tennis courts, a stocked fish pond (located off of Water Street), four pavilions, picnic tables, an all-purpose court, a concession stand and restrooms. In addition, the **Lions Club Recreation Center**, located on 4 acres adjacent to Christmas Tree Park, provides 2 swimming pools, a wading pool, and ballfields; and the **Manchester Volunteer Fire Company carnival grounds and Activities Building** occupies another adjoining 5 acres of land.

#### **North Carroll Community Pond**

This 6-acre County park, located approximately 1 mile south of Town near the intersection of MD 30 and Basler Road and adjacent to the North Carroll Middle School, contains a pavilion, a picnic area, a stocked fish pond, and a tot lot. Tennis courts are available to the public at the adjacent North Carroll Middle School.

#### **Pine Valley Park**

Providing a nature center, nature trails and a stocked fish pond, this Town-owned park land encompasses 35 acres of ground off of Walnut Street on the north side of Town. These holdings also serve as a protective buffer for the Town's Walnut Street water supply springs and well sites. The elevations of this land and its expanse to connect with the adjoining elementary school site, make it a significant asset in the Manchester community which has a great potential for future use and enjoyment. It is open space holdings such as this that give Manchester the rural-town atmosphere and feeling that the Town seeks to preserve and perpetuate.

### **Westside Memorial Park**

The Westside Memorial Park offers a pavilion and tables and encompasses over 15 acres along the north side of MD 27 at the western edge of Town. The park has served as a protective buffer for one of the Town's water supply springs for several years, although this spring is being phased out and replaced with new well sites.

### **Manchester Elementary School Ballfields**

Through the joint use agreement between the County Board of Education and County Department of Recreation and Parks, the Town and area Recreation Councils offer programs which utilize the school facilities when not being utilized by the school itself. These school facilities, indoor and outdoor, are major assets to the Manchester community.

### **North Carroll Middle School Ballfields**

The same comments made above apply to this joint use facility. In addition to ballfields, there are also tennis courts available for use.

#### **b. Planning Considerations**

- \* The recreation facilities available to residents in and around Manchester are community assets and as the community grows, so does the demand for their utilization. Existing facilities need to be continuously maintained and upgraded as necessary.
- \* New facilities need to be developed on available sites such as the future elementary and high school sites. The County Capital Improvement Program FY98 to 2003 anticipates a project to develop 6 baseball/softball fields and several soccer/lacrosse/football fields and tennis courts. These improvements are scheduled currently for FY 2001.
- \* New land also needs to be set aside for future open space and recreational use as the community grows toward build-out.
- \* Through cluster subdivision, common open spaces can be created. Some of these open spaces could be added to the open space network of public holdings, thereby creating possibilities for connections of the open spaces, including pedestrian paths, and bike trails. Protecting existing stream buffers or creating buffers through the subdivision development design contribute to the conservation of sensitive areas, the quality of surface and groundwater, and a natural open space network that enhances the livability of the neighborhoods and the value of property within the community.
- \* Through cooperative efforts and working closely with the Department of Natural Resources' Regional Administrator for Central Maryland and the County Department of Recreation and Parks, funding should be sought to help arrange and secure open space links referred to previously under Watersheds and Streams in section 3.2. Such links could eventually form an overland open space corridor that essentially connects the natural greenways at the headwaters of three watersheds--the Gunpowder, North Branch of the Patapsco River, and Big Pipe Creek. Given the outstanding attributes

of Manchester's elevations and topography, such linkages would be most unique and could become major assets for the community and to the appreciation of the Watersheds.

\* Maryland Program Open Space has been good to Carroll County and funds have been re-allocated to Manchester by the County to match Town funds. As is usually the case, there are more needs than there are available public funds. Many of these needs are met by the efforts of civic clubs or organizations like the Manchester-Lineboro Lions Club, who have contributed outstanding first class swimming pools at their Recreation Center; and the Fire Company with its Activity Building. There are volunteers and community leaders who give their time and talent to use what is available. There are individuals who wish to remain unknown who donate funds to help with unmet needs. There are expectations that the process of subdivision development by the private sector will result in civic-minded developers who want to make their contribution to add to public holdings, for parks and recreational areas as they build and add to the existing community. There is authority to require open space in the approval of new development by the County and Town Planning Commissions. With all the sectors of the community pitching in, (private, public, civic, and individuals) not only will needs be met, but the whole community will benefit as will each and everyone who contributed in some way.

## **6.6 Police Protection**

### **a. Existing Facilities and Services**

Police protection for the Manchester area is provided by the Manchester Police Department, the Maryland State Police, Resident Trooper Program, and the Carroll County Sheriff's Department.

The Manchester Police Department is composed of a Police Chief and two officers. Located on Long Lane adjacent to the Town Hall, the department utilizes one police cruiser and has access to an unmarked van. The Maryland State Police provide protection to the Town of Manchester by incorporating the Town into regular patrols of the area during the off-hours of the Manchester Police Department. The State Police provide access to the Crime Lab, helicopters for use in medivac situations, and access to the Evidence Lab in Pikesville, Maryland, to the Manchester Police Department. The Westminster Barracks is located on MD Route 140 and may be reached by calling 848-3111 for information, or by calling 911 in the event of an emergency.

The Carroll County Sheriff's Department, located at 100 North Court Street in Westminster, is responsible for the operation of the Detention Center, court room security and civil process services. The Sheriff's Department may serve criminal warrants issued by the Circuit Court, respond to Part II crimes, and enforce motor vehicle regulations.

### **b. Planning Considerations**

\* The Manchester Police Department provides police services for Town. Citizens in the Manchester Planning Area outside Town limits are primarily served by the Maryland State Police and the Carroll County Sheriff's Department. Continued growth and development of the community will increase the demands for police protection services and require, in turn, additional manpower.

\* Based on a standard rate of one police officer per 1,000 people at build-out, the Manchester Police Department would require at least 3 additional officers or a total of 6 positions along with the necessary facilities and equipment to provide adequate protection for the public.

\* Expansion of the police force as determined necessary will require increased funding as the Town and environs progress toward build-out. Scaling back the build-out size of the community by the 1997 Plan amendment, will however, reduce the police force needs proportionally from those that could have been expected under the 1991 Plan.

## **6.7 Emergency Services**

### **a. Existing Facilities and Services**

The Manchester Volunteer Fire Department, located on North Main Street, provides fire and emergency service protection for Manchester and its environs. Back-up ambulance service is provided by both the Hampstead and Lineboro Fire Companies.

Equipment utilized by the Manchester Fire Department includes a squad truck, utility truck, two brush trucks and three pump trucks. One pumper has a pumping capacity of 750 gallons per minute and a storage capacity of 1,000 gallons; the second pumper can store 500 gallons, with a pumping capacity of 1,500 gallons per minute; the third pumper has a pumping capacity of 1,500 gallons per minute and a storage capacity of 1,000 gallons. The Fire Department purchased an ambulance which was placed into service in 1991.

The Volunteer Firemen's roster lists approximately 140 total members, with an active roster of 45 members which is a significant increase since 1991, when the active roster numbered 30. Of the 45 active volunteers, 10 are women. Currently, there are the following personnel categories within the Department: 18 Emergency Medical Technicians, 6 Cardiac Rescue Technicians, 3 Paramedics, and 7 First Responders. At least 18 active members have passed all phases of rescue training courses. As the community grows, the number of active volunteers must increase to maintain the adequacy of service which currently exists.

The Fire Department receives a contribution from the Mayor and Council. Carroll County promotes the volunteer system, providing financial support for the Department operating budget at the 87% level. Payments are currently made quarterly. The balance of operating costs plus all capital costs must be raised by the fire company. Other means of revenue for the Fire Department include the annual Firemen's Carnival, weekly bingo games (every Thursday) at the Fire Hall, and Manchester Day. The Fire Department also supports a junior Firemen's group made up of boys and girls between the ages of 12 and 16. Junior members cannot respond to emergencies until their 16th birthday.

### **Emergency Responses**

Table 11 below illustrates the figures illustrate the upward progression of emergency responses as the community grows and life expectancy increases.

**TABLE 11  
EMERGENCY RESPONSES**

<b>Year</b>	<b>First Due Fire Responses</b>	<b>First Due Ambulance Responses</b>	<b>Total Responses</b>
1996	160	473	663
1995	122	414	536
1994	138	415	553
1993	107	430	537
1992	100	344	444
1991	120	311	481
1990	80	305	385
1989	87	299	386
1988	118	308	426

Source: Carroll County Office of Public Safety

An important ingredient in the operations of a successful fire department is the Ladies Auxiliary. In Manchester, in excess of 60 members, the Ladies Auxiliary contributes to the cause by working with the firemen at the Carnival and Manchester Day. The Ladies also generate revenue through wedding receptions, banquets, Lions Club Dinners and an annual dramatic production.

**b. Planning Considerations**

\* The challenge to the Manchester Volunteer Fire Department will be in maintaining the level of service currently provided, while continuing to support a volunteer organization in a growing community.

\* To maintain an adequate level of service while supporting a volunteer organization, the Fire Department will need to continue to take specific steps (i.e., incentive programs to recruit and retain members, purchase of individual fire fighting equipment, etc.), in conjunction with any Carroll County programs, to promote the volunteer system. While more companies are turning to paid personnel to respond during certain hours, Manchester maintains a strictly volunteer organization with the one exception that Manchester does have paid part-time personnel 6:00 a.m. - 4:00 p.m., Monday through Friday covering ambulance service.

Carroll County plans to take steps to promote the volunteer system and support the local fire companies. The Manchester Fire Department would benefit from expanding current promotional events.

## **6.8 Libraries**

### **a. Existing Facilities**

Residents of Manchester currently patronize the North Carroll and Westminster branches of the Carroll County Public Library. The North Carroll Branch opened as a new facility on February 9, 1990, in conjunction with a new senior center. The North Carroll Branch is located at 2255 Hanover Pike in Greenmount.

### **b. Planning Considerations**

\* The North Carroll Branch should serve both the Town of Manchester and the Town of Hampstead, as well as the northeast area of Carroll County well into the future.

\* As the pressure to expand increases, eventually it may have to expand into the area currently utilized as a senior center, or in the alternative, as Hampstead and Manchester approach build-out, new branch library facilities centrally located in each community may be justifiable, with the senior center expanding into the existing facility and serving both communities from this location.

## **6.9 Solid Waste Disposal**

### **a. Existing Facilities**

Carroll County currently owns and operates Northern Landfill, a solid waste disposal facility located off MD Route 140 near Reese. The entire county will rely on operations at this facility to handle solid waste into the foreseeable future. Originally planned to accommodate four individual landfill cells, two have been constructed and put in use. Since the landfill opened in 1979, the first cell has been filled; the second cell is currently 85% filled, and is expected to reach capacity by the year 2000. Recent projections of life expectancy of the landfill were estimated at 10 years, assuming continuance of waste handling operations as have been employed since the landfill opened. The difficulties associated with establishing landfills generally led to a recent decision by the County to construct a transfer station and begin a transfer operation. Transferable solid waste is now being hauled to the York County Resource Recovery Facility which is operated by a Pennsylvania authority. Waste Management of Pennsylvania is currently under contract with Carroll County to handle the transfer. The County will be constructing on a design-build basis, transfer facilities at Northern Landfill and has entered into a contract with Waste Management of Maryland to manage and operate the transfer facilities at the landfill.

**b. Planning Considerations**

- \* Extending the life and perpetuating efficient solid waste operations at Northern Landfill is an essential objective.
- \* To accomplish this objective, cells #1 and #2 will be mined out and this waste transferred along with new waste arriving at the landfill for transfer. These cells will then be utilized for non-transferable waste. (rubble: construction materials, sewage sludge, etc.)
- \* When cells #1 and #2 are at capacity with non-transferrable waste cell #3 will be ready for non-transferrable waste and utilized until cell #4 is needed.
- \* It is projected this method of handling solid waste will enable Northern Landfill's life expectancy to be at least 50 years.
- \* The Hoods Mill Facility which was recently taken off-line, does have additional capacity to handle solid waste, and does offer additional options for utilization in the future.
- \* The Town of Manchester, as is the case with all other County users of the County landfill, pays a tipping fee through any contractor serving the collection of solid waste within Town.
- \* Recycling targets and efforts to achieve these targets by all generators of solid waste are critical to maximize efficiency in solid waste disposal and management.