



Planning and Zoning Commission Report to The Board of Commissioners

Spring 2015 Amendment to the 2014 Carroll County Water and Sewer Master Plan

Re: Hampstead Water Service Area

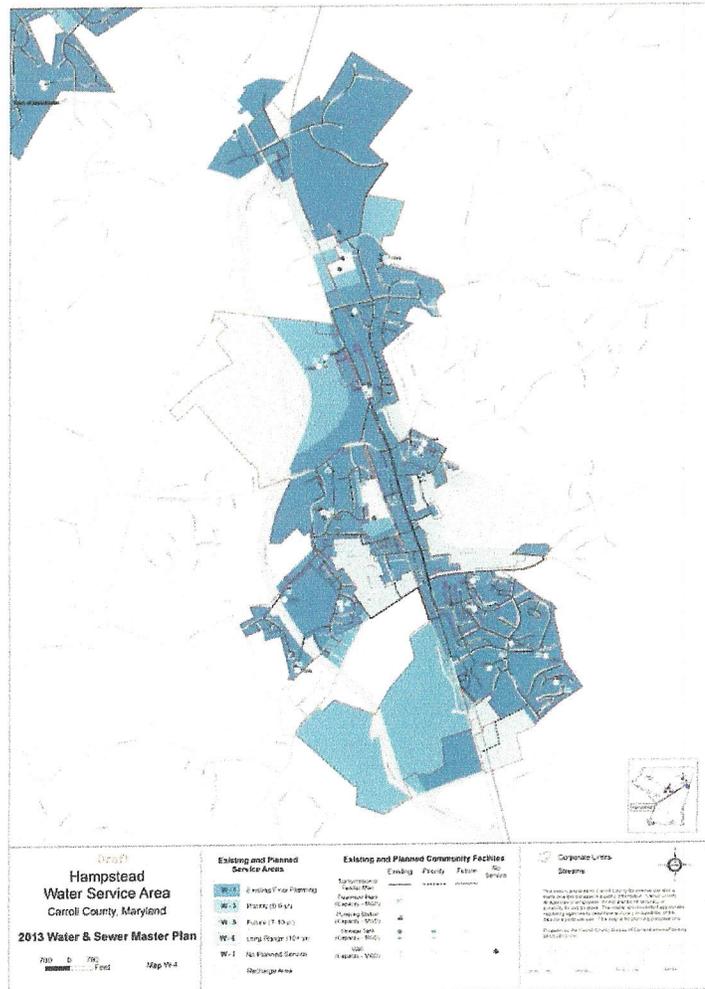
This request would amend the 2014 *Carroll County Water and Sewer Master Plan*. The request detailed below pertains to changes to the Hampstead Water Service Area and associated maps and tables.

Amendment Overview:

1. Update information in tables 8A, 8B and 8E based on information that was provided by the Town of Hampstead
2. Amend Table 16 to reflect the updated data.
3. Amend the Hampstead Water Service Area map showing a category change for a portion of the Harrell property from Future Water Service Area (W-5) to Priority Water Service Area (W-3). This property is currently in the Development Review process and will be ready to hook up in the near future.

Location

The property is located on the east side of Main Street (MD 30 Business) and about 300 feet north of Fairmount Road. The portion of the property being modified on the Hampstead Water Service Area Map (4.266 acres) is located on the eastern part of the property.



Background Information

Map Modification:

In 2011, the Town of Hampstead annexed approximately 4.266 acres comprised of the rear (eastern) portion of three adjoining properties that were owned by F. Douglas Harrell. The front portion of these properties were already incorporated and were zoned R-7,500 (R-75). The incorporated portion of the properties was in the Existing/Final Planning (W-1) while the rear portion was in the Future Water Service Area (W-5).

This map modification request came from the Town of Hampstead. The Harrell Property development is currently going through the development review process and the entire incorporated area needs to be in either the Existing/Final Planning Service Area (W-1) or Priority Water Service Area (W-3) in order to connect to the public system. This development consists of a 17- unit subdivision with 13 of the units being located within the Future Water Service Area.

Table Modification:

In 2013, the County was provided information from the Town of Hampstead to update the Hampstead Water Service chapter. Maryland Department of the Environment's records showed different information. The County has worked with Town staff to update the information in Tables 8A: Hampstead WSA Appropriation, 8B: Hampstead WSA Average Daily Use and 8E: Hampstead WSA Priority Projects.

Agency Comments

Carroll County Health Department did not have any comments regarding the proposed amendment.

Carroll County Department of Public Works Bureau of Utilities provided the following comments regarding the proposed amendment:

“The Department of Public Works Bureau of Utilities is in full support of the proposed water and sewer amendments to the Hampstead Water and Sewer service area. The Bureau has provided comments throughout the process to support these amendments that come with a strict timeline for completion in order to meet Maryland Department of the Environment's permitting and nutrient removal timeline of January 2017.”

Maryland Department of Planning provided the following comments regarding the proposed amendment:

“The property subject to this amendment is located in a planned service area on the Hampstead Water Service Area Map. This amendment is consistent with the municipal comprehensive plan.”

Staff Analysis

The Town of Hampstead has provided updated information allowing staff to update the Hampstead Water Service Area chapter. Modifications to Table 16 have been completed to incorporate the new subdivision in addition to the updated well information.

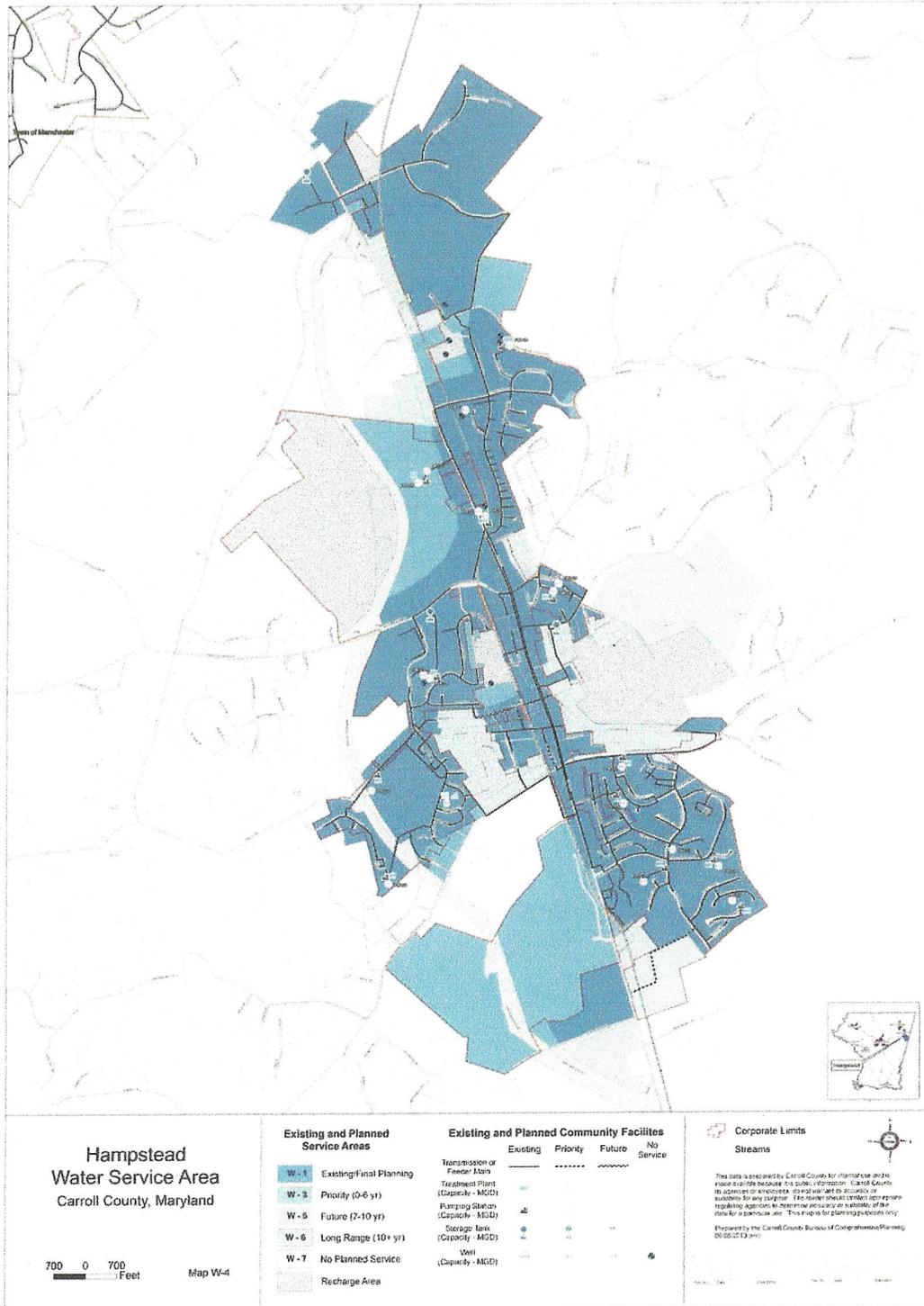
Hampstead Planning Commission Certification

The County will be giving a presentation at the Hampstead Planning Commission on May 27, 2015. It is anticipated that the Town will find these modifications to be consistent with their Comprehensive Plan because the Town has provided the necessary updated information incorporated in this amendment.

Carroll County Planning and Zoning Commission Certification

The Carroll County Planning and Zoning Commission certified that this amendment was consistent with the 2014 Carroll County Master Plan at their May 19, 2015 meeting.

**Spring 2015 Amendment
Carroll County Water and Sewer Master Plan**



**Spring 2015 Amendment
Carroll County Water and Sewer Master Plan**



 Properties with proposed category changes

**Spring 2015 Amendment
Carroll County Water and Sewer Master Plan**



Spring 2015 Amendment
Carroll County Water and Sewer Master Plan

Existing Table 8A: Hampstead WSA Appropriations

6-Digit Watershed	Water Source/Well	Permit Number	Permitted Av. Daily Use (gpd)	Av. Daily Demand Month of Max .Use (gpd)
Patapsco	11, 12, 19, 20 ,21 28, 29, 31, 32	CL1974G062 (07)	283,000	362,000
Gunpowder	19, 24, 25, PWC-1, TW-C	CL1974G162 (03)	161,000	250,000
Gunpowder	13, 15, 22, 23, 26, 27	CL1974G362 (02)	136,000	200,000
Gunpowder	33, 34	CL2008G005 (01)	50,000	72,000
Total			630,000	884,000

Proposed Table 8A: Hampstead WSA Appropriations

6-Digit Watershed	Water Source/Well	Permit Number	Permitted Av. Daily Use (gpd)	Av. Daily Demand Month of Max .Use (gpd)
Patapsco	11, 12, 20 ,21, 28, 29, 31, 32	CL1974G062 (07)	283,000	362,000
Gunpowder	19, 24, 25, PWC-1, TW-C	CL1974G162 (03)	161,000	250,000
Gunpowder	13, 15, 22, 23, 26, 27	CL1974G362 (02)	136,000	200,000
Gunpowder	33, 34	CL2008G005 (01)	50,000	72,000
Total			630,000	884,000

Well number 19 has been removed from the Patapsco Watershed.

**Spring 2015 Amendment
Carroll County Water and Sewer Master Plan**

Existing Table 8B:Hampstead WSA Average Daily Use

Water Source	Max. Safe Yield (mgd)	Avg. Daily Use (mgd)	Max. Peak Flow (mgd)
Well 11 (Main Street)	0.065	0.024	0.051
Well 12 (Main Street)	0.079	0.030	0.063
Well 13 (MD 88)	0.091	0.036	0.057
Well 15 (Ralph Avenue)	0.094	0.030	0.056
Well 19 (Greenmount Church Road)	0.058	0.035	0.055
Well 20 (Old Dairy Farm) not in service	0.058	0.031	0.045
Well 21 (Old Dairy Farm) not in service	0.072	0.035	0.043
Well 22 (Boxwood Drive)	0.030	0.017	0.030
Well 23 (Boxwood Drive)	0.030	0.016	0.030
Well 24 (Small Crossings)	0.020	0.018	0.025
Well 25 (Fairmount Rd/Small Crossings)	0.072	0.010	0.025
Well 26 (Caddis Drive)	0.072	0.030	0.045
Well 27 (Retriever Dr)	0.035	0.028	0.035
Well 28 (Shiloh Run)	0.033	0.028	0.040
Well 29 (Shiloh Run)	0.020	0.023	0.030
Well 31 (Westwood Park)	0.041	0.046	0.055
Well 32	0.059	0.074	0.080
Well 33 (not in service)	-	-	-
Well 34 (not in service)	-	-	-
Triple Green Well (not in service)	-	0.008	-
Stansbury Well (not in service)	-	0.004	-
Total Water Sources (2.223 mg)	0.929	0.529	0.765
Total Water Sources in Use (1.921 mg)	0.799	0.445	0.677

Proposed Table 8B:Hampstead WSA Average Daily Use

Water Source	Max. Safe Yield (mgd)	Avg. Daily Use (mgd)	Max. Peak Flow (mgd)
Well 11 (Main Street)	0.065	0.030	0.051
Well 12 (Main Street)	0.079	0.040	0.063
Well 13 (MD 88)	0.091	0.045	0.057
Well 15 (Ralph Avenue)	0.094	-	-
Well 19 (Greenmount Church Road)	0.058	0.052	0.055
Well 20 (Old Dairy Farm) not in service	0.058	-	-
Well 21 (Old Dairy Farm) not in service	0.072	-	-
Well 22 (Boxwood Drive)	0.030	-	-
Well 23 (Boxwood Drive)	0.030	-	-
Well 24 (Small Crossings)	0.020	0.021	0.025
Well 25 (Fairmount Rd/Small Crossings)	0.072	0.022	0.025
Well 26 (Caddis Drive)	0.072	0.02	0.045
Well 27 (Retriever Dr)	0.035	0.02	0.035
Well 28 (Shiloh Run)	0.033	0.028	0.040
Well 29 (Shiloh Run)	0.020	0.02	0.030
Well 31 (Westwood Park)	0.041	0.02	0.055
Well 32	0.059	0.05	0.080
Well 33 (not in service)	0.03	-	-
Well 34 (not in service)	0.01	-	-
Triple Green Well (not in service)	0.05	-	-
Stansbury Well (not in service)	0.05	-	-
Total Water Sources (2.223 mg)	0.929	0.52	0.765
Total Water Sources in Use (1.921 mg)	1.09	0.39	0.677

**Spring 2015 Amendment
Carroll County Water and Sewer Master Plan**

Existing Table 8E: Hampstead WSA Priority Projects

Project Name	Planning Category	Description	Location	Capacity Added
Wells 33 & 34	Priority (W-3) Immediate	Bring well online (N. Carroll Farms, Sec. 5)	East of MD 30/south of Farm Woods Lane	.266 MGD (Currently Permitted)
Stansbury Well & Triple Green Well	Priority (W-3) Immediate	Bring well online (N. Carroll Farms, Sec. 5)	East of MD 30/south of Farm Woods Lane	.200 MGD (Currently Permitted)
Oakmont Green	Priority (W-3) Immediate	Develop and bring well online	Adjacent to Hole #13 on the Oakmont Green Golf Course	.144 MGD
Main Street Water Main Replacement	Priority (W-3) Immediate	Replace water mains	1.8 mile on Main Street	0 MGD

Proposed Table 8E: Hampstead WSA Priority Projects

Project Name	Planning Category	Description	Location	Capacity Added
Appropriation request	Priority (W-3) 5 Year	Request an increase in Appropriations for already existing wells	N/A	.182 MGD
B&D Reuse water	Future (W-5) 10 Year	B&D Agreement to use water generated by the on-site groundwater treatment system	BRT Property	.153 MGD
Wells 33 & 34	Future (W-5) 10 Year	Bring well online (N. Carroll Farms, Sec. 5)	East of MD 30/south of Farm Woods Lane	.075 MGD

**Spring 2015 Amendment
Carroll County Water and Sewer Master Plan**

Projected Water Supply Demands and Projected Capacity

The following table summarizes projected water demand over the next ten years. It incorporates planned capacity improvements that respond to the demand projections.

Table 16¹
Projected Water Supply Demands and Planned Capacity

Service Area	Projected Water Supply Demands and Planned Capacity																	
	Present Year						Priority Planning (0-6 Year)						Future Planning (7-10 Year)					
	Res. Pop		G		Capacity Million Gal. Daily (MGD)		Res. Dem		G		Capacity Million Gal. Daily (MGD)		Res. Dem		G		Capacity Million Gal. Daily (MGD)	
Freedom/Sykesville	23,911	87	2,070	.109	2,180	4,427	32,258	87	2,810	.751	3,561	4,427	32,258	87	2,810	.751	3,561	4,427
Hampstead	6,266	56	.349	.110	.460	.630	7,306	61	.446	.285	.731	.812	8,295	63	.530	.319	.849	1,040
Manchester	4,698	52	.236	.068	.304	.581	6,347	60	.383	.084	.467	.722	6,502	61	.397	.084	.481	.722
Mount Airy ²	9,482	63	.598	.166	.857	.927	9,914	63	.634	.398	1,032	1,079	9,914	63	.634	.398	1,032	1,079
New Windsor ³	1,449	76	.110	.019	.130	.196	2,122	70	.149	.046	.195	.196	2,583	75	.193	.142	.335	.446
Taneytown ⁴	6,751	54	.362	.092	.454	.620	8,068	58	.465	.112	.577	.639	8,068	58	.465	.112	.577	.639
Union Bridge	1,000	119	.119	.001	.120	.208	1,810	109	.199	.001	.200	.250	1,810	109	.199	.001	.200	.250
Westminster	24,005	104	2,490	.405	2,895	3,597	24,173	104	2,507	.690	3,197	4,927	28,030	100	2,805	.842	3,647	4,927

¹ See Appendix 3 Method for Projecting Water Supply and Sewer Demands. Note: Table 20 corresponds with MDE's required Table 20 and is therefore out of sequence with preceding and succeeding table numbers.
² Mount Airy's Total Demand includes 91,800gpd to account for drought conditions (which is 1.2% of total demand). The Priority calculations are based on the Town's "pipeline" allocations and were provided to us by the Town of Mount Airy.
³ New Windsor's Priority and Future calculations are based on 165 gal per unit for residential demand.
⁴ Mount Airy, Taneytown and Union Bridge do not have any properties in the Future Planning Category.

MDE Modification

In accordance with Environment Article 9-507(a)(4), MDE hereby modifies pages 102 through 107, and page 144 of the 2013 Carroll County Master Water and Sewer Master Plan, as attached.

Modification Effective December 1, 2015

Hampstead Sewer Service Area

Current Conditions

Carroll County owns and operates the public sewer system that serves both the Town of Hampstead and adjoining areas in the county. The Hampstead SSA comprises approximately 1,572 acres, which are located in the northeast section of the County along MD 30 and serves 2,257 EDUs. See Map 22: Hampstead SSA. The plant discharges into Piney Run, within the headwaters of Loch Raven Reservoir.

The Hampstead sewer system consists of a collection system, six pumping stations, and a sewage treatment plant. The treatment plant is located southeast of the Town, near the boundary with Baltimore County. The treatment plant is accessed via a service road off of North Woods Trail.

The Hampstead WWTP provides advanced secondary treatment of domestic wastes using an activated sludge treatment process. Activated sludge plants use a variety of mechanisms and processes and dissolved oxygen to promote the growth of biological flocculants that substantially break down organic material. It also traps particulate material and can, under ideal conditions, convert ammonia to nitrite and nitrate ultimately to nitrogen gas. The plant has a design capacity of 0.900 mgd, with a three-year average flow from 2008-2010 of approximately 0.342 mgd, excluding estimated I&I. The three-year average flow from 2008-2010 of approximately 0.573 mgd, includes estimated I&I.

Since the mid-1990s, the plant has been the subject of litigation focused on alleged negative effects that the temperature of the plant's effluent may have on the receiving stream (Piney Run). As the plant was not previously subject to any temperature limitation, compliance violations were not found. However, as a result of the litigation and subsequent regulatory and policy changes, MDE modified the plant's NPDES permit. It placed a temperature limitation on the plant's effluent of 68° F (20° C) and added thermal monitoring requirements. The permit modification became effective on February 1, 2004.

When the temperature rises during the summer months, past monitoring data suggested that the temperature of the plant's effluent may exceed the permit limitation of 68° F (20° C) or upstream ambient temperature. As technical response to compliance, Carroll County has designed, but has not installed, chiller equipment, and has been issued a permit by MDE to construct the chiller system. Desiring to pursue an alternative that was both less costly and less energy consumptive, as well as potentially less environmentally invasive, Carroll County has worked with a consultant to evaluate different alternatives. The alternative selected by the County is to split the discharge point of the Hampstead Wastewater Treatment Plant. As previously stated, the Hampstead WWTP currently discharges to Piney Run, which is a Designated Use III-P stream within the headwaters of Loch Raven Reservoir. In order to address the effluent temperature matter, the County proposes to keep the current outfall and utilize an existing outfall in conjunction with an industrial discharge at the BTR property. The BTR outfall discharges to an unnamed tributary of Deep Run, which is a Designated Class I-P stream in the watershed of Liberty Reservoir.

The County also plans to upgrade the Hampstead WWTP to meet ENR standards to treat for nutrient loads for flow up to 1.20 MGD.

For planning purposes, the future proposed capacity is 1.20 mgd and is shown in Table 32 in the "Future Planning" category. Likewise, for planning purposes, the sewer service area associated with the future proposed increase in capacity is shown on Map 22.

There are TMDL aggregated Wasteload Allocations for phosphorus, sediment and bacteria for Liberty Reservoir, as indicated below:

TP	2,498.81 lbs /year
TSS	60.75 tons /year
Bacteria	1,045 Billion MPN E. coli / year

In addition, the "Reservoir Watershed Management Agreement of 2005" (see page 31) and the "2005 Action Strategy for the Reservoir Watersheds" limit the phosphorus concentration of the effluent from the Hampstead WWTP and the total phosphorus load delivered to Liberty Reservoir, as indicated below:

"Hampstead WWTP will continue to meet the requirements of its NPDES discharge permit (issued by MDE in 1997), which requires an effluent phosphorus concentration below 0.3 mg/l."

"When a phosphorus loading goal has been established through the TMDL process for each reservoir, MDE, through its NPDES permit program, will not permit an increase in the total phosphorus load delivered to the reservoirs."

In order to evaluate the technical feasibility of expanding the capacity of the Hampstead WWTP to 1.20 mgd, a splitting of the Hampstead discharge between the Loch Raven Reservoir and Liberty Reservoir Watershed was proposed. Carroll County requested that MDE conduct a preliminary analysis of the County's ability to comply with the requirements of the "2005 Action Strategy for the Reservoir Watersheds" while meeting the TMDL limits for Liberty Reservoir. MDE's preliminary analysis indicates that if the Hampstead WWTP were upgraded to meet ENR standards and if the discharge point of the WWTP were re-located to an additional outfall on the BTR property (which discharges to a tributary of Deep Run in the watershed of Liberty Reservoir), it would be technically possible for the WWTP to comply with the phosphorus limits established in the Action Strategy and the phosphorus, sediment and bacteria Wasteload Allocations established by the TMDL for Liberty Reservoir. In the future, as flows from the Hampstead WWTP increase, the allocation in the Liberty Reservoir TMDL may need to be updated to redistribute the WLAs assigned to point sources within the aggregated WLA.

Carroll County submitted an application for an AEL (Alternate Effluent Limit) in connection with its application for a renewal discharge permit. On July 9, 2004, Carroll County submitted a Study Plan for AEL for review by MDE. On December 21, 2005, Carroll County submitted its Final Report in connection with its Study Plan to MDE. MDE requested additional information resulting in Carroll County submitting a supplemental report to MDE on May 7, 2006.

Based on the analysis and documentation submitted to MDE requesting AEL, Carroll County believes that it has demonstrated that the temperature of the treated effluent discharged thus far has done no harm to the thriving indigenous community of shellfish, fish and wildlife in and on Piney Run. MDE is currently reviewing Carroll County's request for an AEL, thus it remains pending. The plant is being operated under a Consent Judgment Agreement that places any violations in abeyance until the resolution of the AEL process.

The State issued a draft permit, incorporating the AEL, on August 19, 2013. The AEL is proposed to be applicable only up to an annual average flow of 0.750 mgd. The County has been actively engaged in discussions with MDE regarding the draft permit. In late 2014, County representatives proposed to MDE the relocation of the current outfall, as part of the plant upgrade to Enhanced Nutrient Removal (ENR) scheduled to be completed by 2017. This proposal has since been modified to a split discharge between the Loch Raven and Liberty Reservoir watersheds. Partial flows would be piped and discharged into the Patapsco River watershed approximately 1 mile to the west of its current location. The proposed plan as shown on Map 22 reflects the pipeline path and outfall location as agreed upon with MDE.

Inventory of Existing Sewerage Treatment Plants, Interceptors, Sewage Pumping Stations, and Force Mains

See Tables 19A-19D for Hampstead SSA infrastructure.

Table 19A: Hampstead SSA Treatment Plant

WWTP Treatment Type	Points of Discharge	WWTP Design Capacity (mgd)	Average Flows (mgd)	Method of Sludge Disposal
Extended aeration	Piney Run	.900	.573	Sludge press; cake form is trucked to Northern Landfill
Discharge Permit Number: 88DP0594C NPDES Number: MD0022446				

Table 19B: Hampstead SSA Interceptors

Interceptor	Diameter (inches)	Average Day Flow (mgd)	Design Flow (mgd)
Main Interceptor	15	n/a	n/a

Map 22

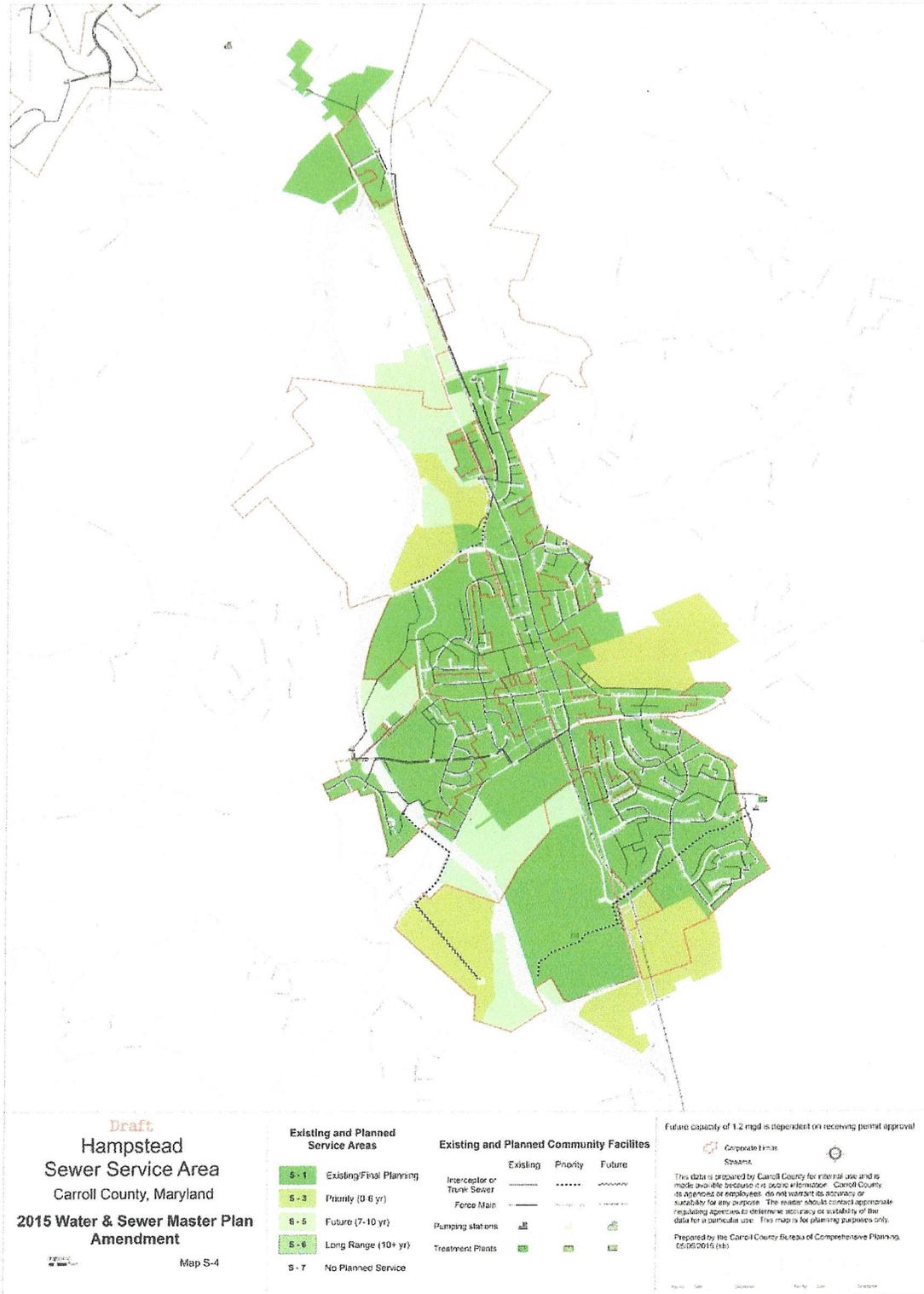


Table 19C: Hampstead SSA Pumping Stations

Pumping Station	Coordinate Location*	# of Pumps	Capacity of Each Pump (mgd)	Normal Pumping Capacity (mgd)	Average Day Pumping (mgd)
Eagle Ridge	N 393817.83 W76 7154.74	2	n/a	0.196	0.004
North Carroll Farms Station #20	N 713011.99 E 1352660.68	2	0.168	n/a	n/a
North Station #8	N 710613.53 E 1352919.14	2	0.040	n/a	0.025
Small Crossings Station #9	N 709347.37 E 1354734.57	2	0.018	n/a	n/a
Shiloh Station #11	N 704552.54 E 1349785.75	3	0.500	n/a	n/a
Roberts Field Station #14	N 701892.64 E 1358892.42	2	0.031	n/a	n/a
Hampstead WWTP	N 703565.58 E 1358927.42	3	0.900	n/a	n/a
Total		16	1.657	.196	.004

*Coordinate locations are Maryland State Plane 1983 Datum.

Table 19D: Hampstead SSA Force Mains

Force Main	Maximum Day Pumpage in MGD (date)	Diameter (inches)	Design Flow (mgd)
Shiloh Station #11	No Flow Meter	10	1.000
North Station #8	No Flow Meter	6	-
Small Crossings Station #9	No Flow Meter	4	-
Roberts Field #14	No Flow Meter	4	-
North Carroll Farms #20	No Flow Meter	4	-
Eagle Ridge	No Flow Meter	6	-
Total			1.000

*Provided Design Average Daily Flow for Design Flow.

Sludge Management

The Hampstead Sewage Treatment Plant generates approximately 1,022 wet tons of sludge per year. The wet sludge is processed through a screw press process and deposited in roll-off dumpsters. Dry sludge is taken to the Northern Landfill for ultimate disposal. See Table 19E for Hampstead SSA Sludge Management.

Table 19E: Hampstead SSA Sludge Management

Quantity (tons/yr)	Quality	Method of Disposal/Use	Permit #s	Future Disposal Method	Problems
1,022 wet 174 dry (15% solid)	Digested liquid sludge, 1% solids, aerobic digestion	Dewatered sludge transported to Carroll County Northern Landfill	2008-SLF-2596 S-91-06-2595-BE	No change anticipated	None

Allocation Procedure

Sewage capacity is allocated on a “first come, first served” basis. The amount of the allocation is based on meter size (e.g., for residential units served by a 5/8-inch meter, the County allocates 225 gpd). Sewage flows are allocated to development following final approval of the record plat or site plan mylars by the County Bureau of Engineering. A maximum of 25 sewer hook-ups may be approved per quarter for each development.

As of 2011, the Board of County Commissioners has 41,850 gallons of the treatment plant’s capacity reserved for industrial uses.

Needs Analysis

Because much of the Hampstead sewer system dates to the 1970’s, numerous components are showing their age. A continual process to update and upgrade the system is being undertaken. In particular, there are two clarifiers in use currently that treat 700,000 gallons of sewage. Ideally there should be two clarifiers to handle the *full* capacity of the wastewater treatment plant, *plus* two additional clarifiers that would create redundancy for the full system. Existing clarifiers will be used with ENR upgrade. A third new clarifier is for processing and a fourth clarifier will be added when the plant is expanded to 1.200 MGD.

In 2009, the County hired a consultant to complete the *Hampstead Sewer System Preliminary Infiltration & Inflow Study*. The study identified specific locations where I&I were occurring throughout the Hampstead sewer system. It estimated that approximately 325,000 gallons (or 57 percent) of treatment capacity were being lost to I&I. The study also identified locations where improvements could be targeted to recapture the greatest amount of capacity. Based on these targeted improvements, it was estimated that approximately 105,000 gallons of capacity currently being lost to I&I could be recaptured. However, in 2011, some of these improvements were completed. Pipes leading into the WWTP and running under a tributary of North Piney Branch were lined, for a measured reduction in I&I of 100,800 gpd.

The County continues to work towards resolving the thermal limitations issue with MDE. Until these issues are resolved, several potential projects (including Enhanced Nutrient Removal upgrades) remain on hold. See Table 19F for Hampstead SSA sewage problem areas.

Table 19F: Hampstead SSA Sewage Problem Areas

Location	Population (Where Applicable)	Nature Of Problem	Status
Green mount	214	Septic Problems, small lots, and limited soil capabilities	Under Study

Planned Projects and Recommendations

See Table 19G for Hampstead SSA priority projects.

Project Name	Planning Category	Description	Location	Capacity Added
Hampstead Trade Center	Priority (S-3) 5 Years	Pumping station, 8" collector line, force main	Hampstead North Business Center	0 MGD
IDA Property	Future (S-5) 10 Years	Pumping station, 8" collector line, force main	IDA property west of MD 30.	0 MGD
Upgrade WWTP	Priority (S-3) 5 Years	Upgrade treatment process to ENR	Existing WWTP	0 MGD
Hampstead Sewer Main Upgrade	Priority (S-3) 5 Years	Replace 4,750 feet of existing clay pipes per year starting in FY19	Throughout Town	0 MGD
West Hampstead Collector Sewer Main Repair	Priority (S-3) 5 Years	Repair the clay sewer mains	Carroll Street, Houcksville Road, Gill Avenue and Shiloh Road	0 MGD
Gravity Sewer Main	Priority (S-3) 5 Years	Install 2,600 feet of 10" force main on Houcksville Road near MD 30 and 3,100 feet northwest of the Hampstead WWTP	Houcksville Road to Treatment Plant	0 MGD
New Force main	Priority (S-5) 10 Years	Upgrade force main to 16" and any additional projects that need to occur with this upgrade.	Shiloh Pump Station to Blackrock Road	0 MGD

Long-Term Recommendations (10+ years)

- ◆ Implement the targeted improvements to the collection system recommended in the I&I study.
- ◆ Possibly install additional clarifiers at the WWTP
- ◆ Identify specific industrial areas for which Commissioner-reserved treatment capacity will be used, to avoid preemption of the capacity by other development.
- ◆ Implement any projects associated with the resolution of the thermal limitation issue, including possible discharge chillers or their alternatives.
- ◆ Undertake Enhanced Nutrient Removal upgrades to the wastewater treatment plant, pending resolution of the thermal limitation issue.

The following table summarizes projected sewer demand over the next ten years. It incorporates planned capacity improvements that respond to the demand projections.

Table 32¹
Projected Sewerage Demands and Planned Capacity*

Area	Present Year										Priority Planning (0-6 Year)										Future Planning (7-10 Year)														
	G			Capacity Million Gal. Daily (MGD)			Res. Pop. Ser. ²			G			Capacity Million Gal. Daily (MGD)			Res. Pop. Ser. ³			G			Capacity Million Gal. Daily (MGD)			Res. Pop. Ser. ³										
	Res. Pop. Ser. ¹	P	C	Res. Dem.	Oth. Dem.	Tot. Dem.	Ex. Cap.	D	P	C	D	Res. Dem.	Oth. Dem.	Tot. Dem.	P	C	D	Res. Dem.	Oth. Dem.	Tot. Dem.	P	C	D	Res. Dem.	Oth. Dem.	Tot. Dem.	P	C	D						
Freedom/Sykesville	17,648	93		1.647	.143	1.790	2.600 ²	91			26,762	.302	.376	2.757	3.100 ⁶	91			2.455	.487	.863	6,971	6,971	26,844	.315	.513	2.777	3.100 ⁶	91			2.462	.580	1.093	1,200 ⁷
Hampstead	6,342	66		.431	.230	.661	.900	69			6,971	.400	.495	.545 ⁴		69			.400	.400	.495	5,518	5,518	6,187	.441	.093	.534	.795 ⁵	72			.441	.093	.534	.795 ⁵
Manchester	4,105	68		.274	.079	.353	.500	73			5,518	.165	.165	.760	1.200	67			.631	.397	1.028	9,914	9,914	9,914	.631	.397	1.028	1.200	68			.631	.397	1.028	1.200
Mount Airy ⁶	9,482	73		.595	.009	.604	.115 ⁴	48			9,914	.095	.173	.976	1.100	97			.095	.173	.976	2,032	2,032	2,617	.136	.103	.239	.251	52			.136	.103	.239	.251
New Windsor ⁷	1,399	39		.054	.009	.063	.115 ⁴	48			2,032	.095	.173	.976	1.100	97			.095	.173	.976	8,018	8,018	8,018	.803	.173	.976	1.100	95			.803	.173	.976	1.100
Taneytown ⁸	6,701	104		.700	.001	.701	.200	145			8,018	.001	.174	.200	2.00	145			.803	.173	.976	1,507	1,507	2,200	.288	.001	.289	.315	131			.288	.001	.289	.315
Union Bridge	1,042	166		.173	.001	.174	.200	145			1,507	.001	.174	.200	2.00	145			.219	.001	.220	4,216	4,216	4,216	4.216	.989	5.205	8.335	169			4.216	.989	5.205	8.335
Westminster	23,636	175		4.148	.675	4.823	5.000	174			24,271	.675	.989	5.205	8.335	174			4.216	.989	5.205	25,925	25,925	25,925	4.394	1.07	5.464	8.335	169			4.394	1.07	5.464	8.335

¹See Appendix 3 Method for Projecting Water Supply and Sewer Demands. Note: Table 32 corresponds with MDE's required Table 32 and is therefore out of sequence with preceding and succeeding table numbers.

²This number represents the Carroll County portion of the capacity

³The future capacity of 1.2 mgd is dependent on receiving permit approval.

⁴The WWTP capacity will only increase in Manchester if/when grant funding becomes available

⁵The WWTP capacity will only increase in Manchester if/when grant funding becomes available

⁶The Priority calculations are based on the Mount Airy's "pipeline" allocations and were provided to the County by the Town.

⁷New Windsor's Priority and Future calculations are based on 165 gal per unit for residential demand.

⁸Mount Airy, Taneytown and Union Bridge do not have any properties in the Future Planning Category.