



Planning Commission Report to the Board of County Commissioners

Fall 2010 Special Amendment: Hampstead Sewer Service Area

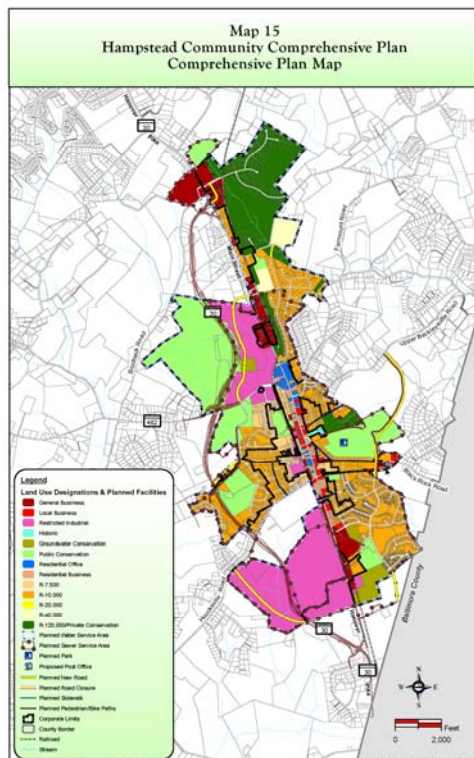
This request would amend the September 2007 *Carroll County Master Plan for Water and Sewerage* and any subsequent amendments prior to this request. The request detailed below pertains to changes to the Hampstead sewer service area and associated maps and tables.

Request

Modify the Hampstead sewer service area map and Table 6 in the plan document to reflect recommended changes contained in the recently adopted *2010 Hampstead Community Comprehensive Plan*.

Location

Various locations within the Hampstead designated growth area.



Background Information

The *2010 Hampstead Community Comprehensive Plan* was approved by the Hampstead Planning Commission on April 28, 2010 and adopted by the Mayor and Council on July 13, 2010. The plan contains recommended changes to the sewer service area that will implement the plan. These changes are detailed on Map 10-B and are discussed in Section D – Water and Sewerage Facilities – Wastewater.

The recently adopted Water Resources Element (WRE) estimated that the 900,000 gallons per day design capacity of the treatment plant is only slightly lower than the projected buildout demand of 930,000 gallons per day. This demand was based on the entire planned service area as it existed before the 2010 comprehensive plan was adopted. The WRE also noted that the planned service area did not cover the entire 2003 designated growth area. It is assumed that the entire designated growth area eventually would be served with sewer. This would mean that in order to meet the total projected demand of the 2003 growth area of 1.5 million gallons per day, the treatment plant would need to be expanded.

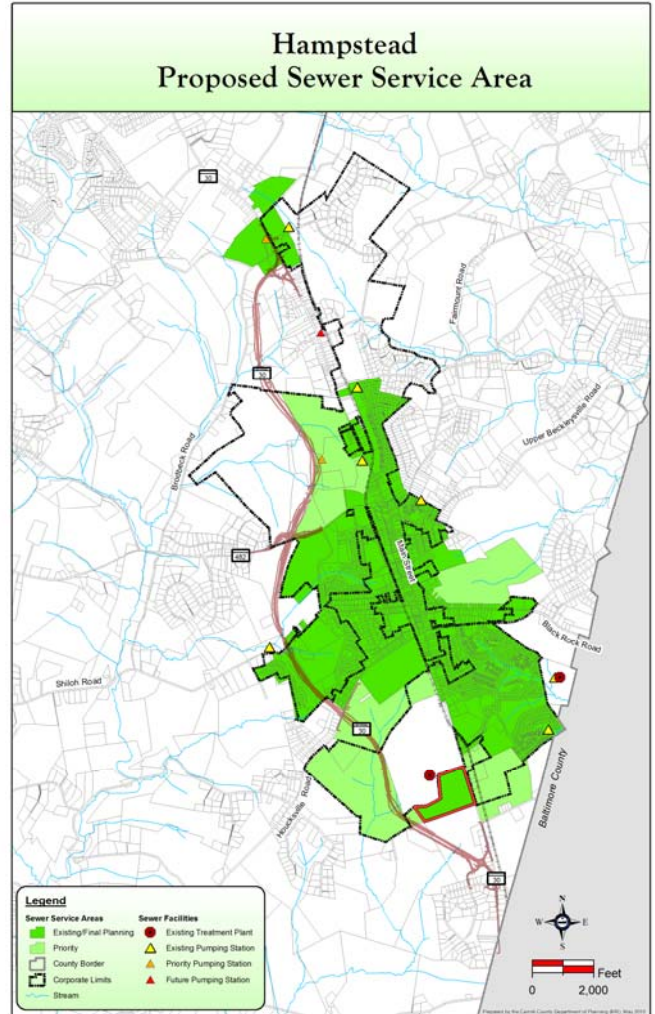
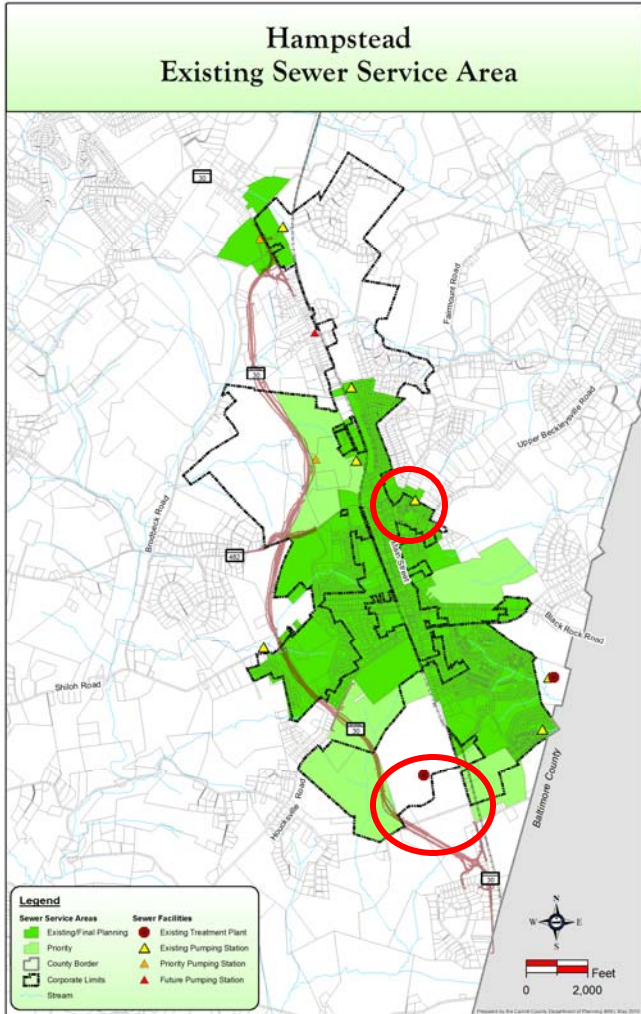
In response to the information from the WRE, the *2010 Hampstead Community Comprehensive Plan* recommends reducing the planned sewer service area. Modifications were proposed for the sewer service area to bring the service in-line with the limits of the designated growth area. As the text indicates, “areas designated within the planned sewer service area but located outside the Growth Area Boundary (GAB) were removed from the planned service area. Exceptions were those properties already serviced by the sewerage system and properties that are currently zoned business or industrial.”

The existing sewer service area and proposed sewer service area are shown on the following page. Areas proposed to change are circled in red on the “Existing Sewer Service Areas” map. The proposed sewer service area slightly modifies that proposed in the *2010 Hampstead Community Comprehensive Plan*. The Jos. A. Bank property (outlined in red on the “Proposed Sewer Service Areas” map) was recommended for the Priority (S-3) service area category in the plan, but is being proposed for the Existing/Final Planning (S-1) service area category with this amendment.

The Hampstead wastewater treatment plant currently is permitted for a flow of 900,000 gallons per day. Currently, the estimated flows are 628,000 gallons per day, which includes an estimated 231,000 gallons per day attributed to inflow and infiltration. The resulting excess treatment capacity is 272,000 gallons per day. Additionally, targeted improvements recommended in a recent study¹ could recapture an estimated 105,000 gallons per day of capacity.

¹ *Hampstead Sewer System Preliminary Infiltration & Inflow Study*. Johnson, Mirmiran & Thompson, 2009.

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Existing Service Area Category	Acres
Existing/Final Planning (W-1)	1,249
Priority (W-3)	546
Future (W-5)	0
TOTAL	1,795

Proposed Service Area Category	Acres
Existing/Final Planning (W-1)	1,281
Priority (W-3)	560
Future (W-5)	0
TOTAL	1,841

Agency Comments

The Reservoir Technical Group suggested that clarifying language to be added to the Staff Analysis to indicate that the total phosphorus (TP) effluent concentration limit of 0.30 mg/l has been met by the wastewater treatment plant “on a consistent, long-term basis andit will continue to do so, even as improvements are made to eliminate the present I/I to the Town’s collection system.” Phosphorus loads could have an impact on water quality in Loch Raven Reservoir. [*Note: This language has been added to the text below.*]

No other comments were received from State or County agencies or adjoining jurisdictions.

Staff Analysis

The *2010 Hampstead Community Comprehensive Plan* contained a sewer demand analysis of the new growth area and sewer service area recommended in the plan. The analysis compared total demand (current and future) with the current permitted capacity of the wastewater treatment plant (900,000 gallons per day).² The resulting calculations are shown in the table on the following page. The table reflects an adjustment to the projected demand for the Jos. A. Bank property that is based on actual flows extrapolated to account for a planned expansion, rather than an estimate based on 800 gallons per day applied to the gross property acreage.

The analysis indicates that, with the implementation of measures to reduce inflow and infiltration and recapture that capacity, approximately 29,799 gallons per day of capacity would remain once the entire sewer service area, as it is proposed to change, is served. As the RTG pointed out, the amendment does not address total phosphorus (TP) effluent concentrations that could impact water quality in Loch Raven Reservoir. However, the wastewater treatment plant has been meeting the TP limit of 0.30 mg/l on a consistent, long-term basis, and that will continue even as improvements are made to eliminate the present inflow and infiltration into the system.

The *Carroll County Master Plan* focuses growth into designated growth areas. The Hampstead community is a designated growth area. The Hampstead Wastewater System serves the designated growth area.

² To calculate potential future demand created by infill development within the Existing/Final Planning (S-1) category, development potential was estimated using the existing County zoning outside of the Town and the zoning proposed in the plan for properties inside the Town. Potential future demand for properties located in the Priority (S-3) category was calculated based on development potential associated with land use designations contained in the plan.

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Capacity Currently Available for Existing Development and Future Growth Wastewater Capacity Planned Wastewater Service Areas - Hampstead Public Sewer System April 2010	
Rated (Average Day) Capacity (Design Flow) = .900 MGD	Values (gpd)
National Pollutant Discharge Elimination System (NPDES) Permitted Flow	900,000
Estimated Inflow and Infiltration (I&I) Flow impacting the Wastewater Treatment Facility	- 231,000
Remaining capacity for existing and future wastewater flow.	= 669,000
Infill Flow Demand (S-1 Existing/Final Planning Service Area) within GAB	
Current flow without I&I (2007)	397,000
Estimated flow from existing unimproved residential lots and from additional potential residential lots created through subdivision ((19 lots + 134 lots) x 250 gpd)	+ 38,250
Estimated additional commercial and industrial flow ((19.1 ac. x 700 gpd) + (6.2 ac. x 800 gpd) + (10,000 gpd Jos. A. Bank property))	+ 28,330
Estimated additional groundwater conservation flow (6.6 ac. x 352 gpd)	+ 2,323
Capacity Needed for Existing and Potential Infill Flow	= 465,903
Current remaining capacity (669,000 - 465,903)	203,097
Future Flow Demand (S-3 Priority Planned Service Area) within GAB	
Estimated residential flow (4 lots)	1,000
Estimated commercial and industrial flow ((5.8 ac. x 700 gpd) + (275.7 x 800 gpd))	+ 224,620
Estimated groundwater conservation flow (44.0 ac. x 352 gpd)	+ 15,488
Capacity Needed for Potential Future Flow	= 241,108
Estimated Flow Demand – S-1 and S-3 Service Areas outside GAB	
Estimated flow from existing improved residential lots, existing unimproved residential lots, and potential residential lots created by subdivision (0 lots x 250 gpd)	0
Estimated commercial and industrial flow ((4.1 ac. x 700) + (80.4 x 800))	+ 67,190
Total Flows from S-1 and S-3 Service Areas outside GAB	67,190
Total flows needed to service existing and planned sewer service areas (465,903 + 241,108 + 67,190 =)	774,201
Estimated Inflow & Infiltration Flow	+ 231,000
Estimated Recapture of Inflow & Infiltration	- 105,000
Total Future Capacity Needs (including I&I)	= 900,201
Net (Average Day) Capacity Available to Serve Future Needs within Planned Service Area	= (201)

Hampstead Planning Commission Certification

At their August 25, 2010 meeting, the Hampstead Planning Commission certified that this amendment to the *Carroll County Master Plan for Water & Sewerage* is consistent with the *2010 Hampstead Community Comprehensive Plan*.

Carroll County Planning Commission Certification

At its September 21, 2010 meeting, the Carroll County Planning & Zoning Commission approved the amendment and certified it as consistent with the Carroll County Master Plan.

**Table 6
Projected Sewerage Demands and Planned Capacity***

Present Year						
Service Area	Residential Population Served ¹	GPCD	Capacity in Million Gallons per Day (mgd)			
			Residential Demand	Other Demand	Total Demand	Existing Capacity
Mount Airy (Map S-1)	8,631	83	0.563	0.150	0.713	1.200
Sykesville/Freedom (Map S-2)	19,051	81	1.552	0.826	2.378	3.500
Manchester (Map S-3)	3,714	59	0.219	0.019	0.238	0.500
Hampstead (Map S-4)**	5,577	82	0.458	0.170	0.628	0.900
Westminster (Map S-5)	24,560	115	2.826	1.423	4.249	5.000
Union Bridge (Map S-6)	1,049	103	0.108	0.029	0.137	0.200
New Windsor (Map S-7)	1,114	67	0.075	0.022	0.097	0.094
Taneytown (Map S-8)	6,200	106	0.660	0.165	0.825	1.100
Priority Planning (0-6 Year)						
Service Area	Residential Population Served ¹	GPCD	Capacity in Million Gallons per Day (mgd)			
			Residential Demand	Other Demand	Total Demand	Planned Capacity
Mount Airy (Map S-1)	12,203	87	0.873	0.352	1.225	1.348
Sykesville/Freedom (Map S-2)	33,612	76	2.665	0.835	3.500	3.500
Manchester (Map S-3)	5,486	65	0.356	0.093	0.449	0.500
Hampstead (Map S-4)**	6,021	70	0.421	0.480	0.901	0.900
Westminster (Map S-5)	41,728	83	4.258	1.353	5.611	5.700
Union Bridge (Map S-6)	5,260	80	0.447	0.184	0.631	0.800
New Windsor (Map S-7)	1,913	80	0.139	0.047	0.186	0.190
Taneytown (Map S-8)	13,439	78	1.222	0.513	1.736	1.740
Future Planning (7-10 Year)						
Service Area	Residential Population Served ¹	GPCD	Capacity in Million Gallons per Day (mgd)			
			Residential Demand	Other Demand	Total Demand	Planned Capacity
Mount Airy (Map S-1)	16,635	74	1.202	0.430	1.632	1.650
Sykesville/Freedom (Map S-2)	33,723	77	2.674	1.415	4.089	4.100
Manchester (Map S-3)	5,969	66	0.393	0.093	0.486	0.500
Hampstead (Map S-4)**	6,021	70	0.421	0.480	0.901	0.900
Westminster (Map S-5)	44,668	82	4.499	1.408	5.907	6.000
Union Bridge (Map S-6)	5,366	80	0.455	0.414	0.869	0.870
New Windsor (Map S-7)	2,818	80	0.212	0.156	0.368	0.370
Taneytown (Map S-8)	14,257	78	1.286	0.566	1.852	1.860

¹ Present Year Population figures include only those people living in Existing/Final Planning Area
² Priority Year Population figures assume total build out of Existing & Priority Service Areas
³ Future Year Population figures assume total build out of Existing, Priority, & Future Service Areas

GPCD – Gallons per Capita per Day

*See Appendix 3 Method for Projecting Water Supply and Sewerage Demands
** Reflects recapture of 105,000 gpd of I&I

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