



**GUIDANCE DOCUMENT**

**WASTEWATER  
CAPACITY MANAGEMENT  
PLANS**



**MARYLAND DEPARTMENT OF THE  
ENVIRONMENT**

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This *Guidance Document for Wastewater Capacity Management Plans* (including the Worksheets for the Capacity Report) is available at MDE's web site under the heading of "More Publications"

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# TABLE OF CONTENTS

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## **GENERAL INFORMATION**

Purpose of WWCMP Guidance Document .....	5
Legal Mandate to Manage Wastewater Allocations .....	6
What Actions Municipalities and MDE are Expected to Take .....	7
Rationale and Description of Guidance Document Reports .....	8
Where to Send Reports .....	9
Changes in MDE Annual Sewage Flow Allocation Tables .....	10

## **ELEMENTS OF A WASTEWATER CAPACITY MANAGEMENT PLAN**

How to Calculate Existing Flows .....	11
How to Determine Available Capacity .....	12
Guide to Local Process Considerations .....	13
Controlling Allocations of New Connections to Wastewater Systems .....	14
Planning for Wastewater Flows from Future Development .....	15
Approval of Subdivision Plats .....	15
Defining Wastewater Capacity Overload .....	16
Actions on Overload Conditions .....	17

## **APPENDICES** .....

19

Flow Calculation Tables .....	21
Allocation Worksheets and Procedures .....	25
Flow Worksheets and Capacity Reports – Completed Examples .....	33
Flow Worksheets and Capacity Reports – Blank Forms .....	41

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## GENERAL INFORMATION

### Purpose of WWCMP Guidance Document

This *Guidance Document* is provided to assist local governments and other community wastewater treatment plant (WWTP) owners in the State of Maryland to determine plant capacity and to track the remaining available capacity for allocation. The sewer systems at many municipalities are in a state of disrepair due to the aging infrastructure. Because of the significant lead time required for measures such as sewer rehabilitation or facility expansion, the *Guidance Document* emphasizes the need to plan ahead to ensure that growth takes place without overloading sewage facilities. The guide should enable WWTP owners to:

- Identify when a treatment plant's actual flows are approaching or exceeding the design capacity;
- Make commitments for new connections with confidence that there is adequate capacity to serve the new as well as existing customers;
- Determine when the issuance of additional building permits must be curtailed until improvements are completed so that the treatment plant can maintain compliance with its discharge permit;
- Have more lead-time to plan for needed collection and wastewater treatment system upgrades to accommodate new growth and to arrange for the financing of the improvements;
- Become more aware of how your facility is performing; and be encouraged to take appropriate steps to address or prevent increased flows before effluent violations, regular bypassing, or overflows occur; and
- Provide all decision-makers in a municipality (elected officials, health department, public works, assessment and taxation, etc.) with the information needed to make informed decisions about the capacity of their wastewater systems and the ability to accommodate new connections.

## **Legal Mandate to Manage Wastewater Allocations**

MDE recognizes the crucial role of local governments in the provision of safe and adequate wastewater treatment systems and the excellent performance achieved by most of the locally owned and operated WWTPs in the State of Maryland. At the same time, local governments face many challenges to maintain and operate these systems in compliance with federal and State laws and regulations. The cost to keep these increasingly complex facilities operating properly continues to increase. The ability to raise rates to keep pace with these costs is a challenge. Perhaps most challenging, however, is the need to manage the allocation of flow to new customers for residential, commercial, and industrial use, in conformance with local land use, water and sewerage plans, and the NPDES permit limits. The following language from the Maryland Environment Article makes it clear that the authority responsible for issuing building permits and subdivision plat approvals must ensure that adequate capacity is or will be available:

### **§ 9-512 (b) Building Permits – Conformity with County Plan; Issuance of Building Permits –**

- (1) A State or local authority may not issue a building permit unless:
  - (i) The water supply system, sewerage system, or solid waste acceptance facility is adequate to serve the proposed construction, taking into account all existing and approved developments in the service area;
  - (ii) Any water supply system, sewerage system, or solid waste acceptance facility described in the application will not overload any present facility for conveying, pumping, storing, or treating water, sewage, or solid waste;...

### **§ 9-512 (d) Subdivision Plats –**

- (1) A State or local authority may not record or approve a subdivision plat unless any approved facility for conveying, pumping, storing, or treating water, sewage, or solid waste to serve the proposed development would be:
  - (i) Completed in time to serve the proposed development; and
  - (ii) Adequate to serve the proposed development, once completed, without overloading any water supply system, sewerage system, or solid waste acceptance facility.
- (2) Each water supply system, sewerage system, and solid waste acceptance facility in a subdivision shall:
  - (i) Conform to the applicable county plan; and
  - (ii) Take into consideration all present and approved subdivision plats and building permits in the service area.

## What Actions Municipalities and MDE are Expected to Take

**Municipalities:** The required actions under the *Guidance Document* are as follows:

- (a) Submit the **Available Capacity Report** to the Health Directors or other appropriate entities by January 31<sup>st</sup> each year.
- (b) Submit the **Wastewater Capacity Management Plan (WWCMP)** and **Municipal Sewage Capacity Report (MSCR)** to MDE for municipalities operating at 80% design capacity by January 31st based on the three-year adjusted average flow or within 90 days of the effective date of an MDE/DOJ order involving compliance or capacity related matter and by January 31st thereafter. Federal facilities, State facilities, schools, motels, and WWTPs that are located outside of Maryland's boundaries, but discharge to Maryland waters, such as Leesburg, Virginia, are exempted from submitting these reports to MDE. The yearly reports are required until available capacity is secured or until MDE informs the municipality that the reports are no longer necessary. Based on review of facility performance, municipalities are expected to initiate measures such as operational changes to improve performance, plans and schedules for facility upgrades, if needed, and voluntary curtailment of building permit approvals.

**Department:** The Department will perform the following functions:

- (a) Each year, the Department will provide to municipalities and the Health Directors Sewage Flow Reports containing information on average flows, design capacities, and permit flows.
- (b) The Health Directors, on behalf of the Department, will review information on Available Capacity provided by municipalities and decide whether to approve a sewer allocation.
- (c) The Department will review WWCMs and MSCRs and provide comments to ensure that facilities will not get overloaded while available capacity is being secured. Follow-up actions may include meetings, financial assistance from MDE or other agencies, and compliance orders where appropriate.

## Rationale and Description of Guidance Document Reports

As mentioned earlier, this document is intended as a guide to help municipalities meet the requirements of the Environment Article. By following the standards and procedures described in this *Guidance Document*, the permittees are expected to manage their facility capacities responsibly. Because the Article also requires the Department to ensure sewer systems remain within design capacity, this guide requires submission of three documents: the Available Capacity Report, the Wastewater Capacity Management Plan, which is a local tool to manage capacity and allocations, and the Municipal Sewage Capacity Report, which is used to assess sewage capacity and capacity demand.

- Available Capacity Report

This report provides available capacity figures to the Health Directors or other appropriate entities, if applicable, as of January 31<sup>st</sup> each year. It contains information on average flow, design capacity/ permit flow, gross sewer capacity, prior approvals, and recent connections.

### Rationale

Local governments are required to have a mechanism in place to track and manage the capacity of their wastewater systems in a manner that considers all prior commitments and the ability of the system to handle additional flows from future development. To approve sewer allocations, the local Health Directors or appropriate entities must have information on available capacity.

- Wastewater Capacity Management Plan (WWCMP)

A WWCMP is a planning and engineering tool used to monitor the relationship between plant capacity and population/economic growth. It contains information on sewage system capacity and capacity demand created by existing and ongoing growth and development. Under Subsection 9-512 of the Environment Article, the State and municipal permit issuance authorities are required to make sure there is adequate sewer capacity before issuing building permits or approving subdivision plats. Pursuant to the Article, municipalities are expected to develop capacity management plans so that growth can be accommodated without impairing water quality or threatening public health. Connections approved through the subdivision plat approval process, developers agreements, and issuance of building permits must be closely tied to WWTP capacity to enable the facility owner to meet commitments and comply with the State and federal water pollution control laws.

- Municipal Sewage Capacity Report (MSCR)

A MSCR requires a thorough evaluation of the current and future capacity demand and an assessment of the treatment plant's performance. Information on steps being taken to secure additional capacity, if necessary, is also included in the report.

Municipalities are expected to review the ability of their facilities to comply with the discharge permits, identify deficiencies, and take corrective steps in a proactive manner to maintain their capacities. This requirement is intended to ensure that a facility owner is monitoring the flow, and has evaluated the need for additional capacity, based on population projections and other planning information. By planning ahead, the system owners would be able to implement capacity expansion projects in an orderly manner without incurring permit violations or disrupting their development plans.

Local governments are reminded that the expansion of WWTPs and improvements to collection systems require demonstrated consistency with the local Comprehensive Land Use Plan, inclusion in the County Water and Sewerage Plan, an NPDES permit modification (including applicable nutrient loading caps and TMDL waste load allocation), and other permits for the construction of the facility, including any permits required for impacts to wetlands, waterway, or the 100-year floodplain.

#### Rationale for WWCMPs and MSCRs

As a WWTP approaches its design capacity, the facility may be challenged to meet permit requirements. If system improvements do not keep pace with an increase in flow, plant overloads and permit violations may occur. The plant may experience more sanitary sewer overflows from an increased number of users, undersized pump stations and force mains, or less capacity in the system for inflow and infiltration storage. Permit violations contribute to degraded water quality and can result in State and/or federal penalties and expose WWTP owners to third-party lawsuits. Local government may fail to meet its contractual obligations for sewer service, if public works agreements are made without knowing the WWTP's limitations. Because expanding sewer capacities require significant time and resources, it would be prudent for municipalities to evaluate their capacity situation at the 80% design level or sooner depending on plant performance and the community's rate of growth.

### **Where to Submit Reports**

Mail Wastewater Capacity Management Plans (WWCMPs) and Municipal Sewage Capacity Reports (MSCR) to:

Wastewater Permit Program  
Water Management Administration, 4<sup>th</sup> Floor  
Maryland Department of the Environment  
1800 Washington Blvd.  
Baltimore, Maryland 21230-1708

## Changes in MDE's Annual Sewage Flow Allocation Table

In past years, MDE has annually summarized the previous two years of flow data from the Discharge Monitoring Reports (DMRs) submitted by WWTPs and provided counties with allocation tables (the 2004 Flow Allocation Table, for example, used data from calendar years 2002 and 2003). The Tables provided information on recent sewage flows and design capacity of WWTPs to help the WWTP owner determine available capacity **in conjunction with** information on previous allocation activity. Use of the table alone may indicate more capacity than is actually available and allocable.

To maintain the tracking of allocable capacity, MDE intends to continue providing flow tables for all WWTPs. Beginning with the 2005 table, the Department is using three, rather than two, years of flow data to reduce flow fluctuations due to I&I. MDE is also now requiring that the locally prepared WWCMPs incorporate local data including subdivision plats, developer agreements, and building permits issued to develop a more accurate representation of available/allocable capacity. The plant owners should compute annual average flows using the guidelines under "How to Calculate Existing Flows".

# ELEMENTS OF A WASTEWATER CAPACITY MANAGEMENT PLAN

## How to Calculate Existing Flows

1. Using flow records from discharge monitoring reports (DMRs), determine annual average wastewater flows for the three most recent calendar years for which data are complete. For example, year 2006 flow table would use data for 2003, 2004, and 2005. To compute the annual average flow for continuously discharging wastewater plants, determine the monthly average flow for each month, and then take the average of the monthly averages. For plants with an intermittent discharge, annual average flow is computed by dividing total flow discharged during a calendar year by 365.
2. When making decisions on the appropriate flow level to use in capacity determinations, MDE recommends leaning to a more conservative approach to better assure adequate capacity is available over the longer term under adverse conditions. For example, the three-year average flow should be adjusted using the following criteria:
  - a. If each of the three years shows a consistent upward trend each year, use only the most recent calendar year's average instead of a three-year average.
  - b. If the most recent two of the three calendar years are both higher than the overall three-year average, use only the second highest average year of the three.
  - c. Municipalities with seasonal flow patterns such as resort towns should compute annual average flows by averaging flows during peak months.
3. A flow value for low-pressure systems such as septic tank effluent pump (STEP) systems or grinder pump systems can range from 150 to 175 gallons per day per EDU. Consider using 175 GPD as a safety factor.
4. An estimation of extraneous flow or inflow and infiltration (I&I) should be calculated. If an analysis to determine I&I from in-pipe flow monitoring and hydraulic modeling has not been completed for a WWTP, **the owner/operator can estimate the amount of I&I flows by subtracting the daily average flows for the calendar year 2002 from calendar year 2003** since the flow data of calendar year 2002 is associated with a drought period and calendar year 2003 was the wettest year on record. **This value for I&I estimates a worst case scenario that will assist the owner/operator in developing programs to reduce I&I flows and prevent an over-allocation of future plant capacity.**
5. If a large portion of a municipality is made up of second/vacation homes, the allocation of wastewater for these homes must be given careful consideration. Such homes may eventually be sold to year-round residents with an increase in the amount of wastewater demand. Similarly, communities for seniors typically have lower usage figures, but if it is

possible for the use of such homes to convert to the general public, the amount of wastewater demand will be under-estimated. For communities where such a trend is well established, capacity set aside should be considered to compensate for increase in sewage flow.

## How to Determine Available Capacity

The following is intended only as a guide. Local methodologies may vary. The key elements of a WWCMP are:

1. Determine the **rated design capacity** of the WWTP (from MDE's construction permit).
2. Determine the **permitted capacity** of the WWTP (from MDE's discharge permit where a limitation for the WWTP to treat certain pollutants may reduce the actual treatment capacity of the plant).
3. Compute the calendar year average flow for the previous year during January each year. Determine an average of calendar year average flows for the past three years. Adjust the three-year average flow as per the section on "How to Calculate Average Flows" described above. Subtract the three-year adjusted flow either from the **rated design capacity or permitted capacity, whichever is less**. This will represent **gross available wastewater capacity**.
4. **Determine the number of existing unimproved (infill) parcels and lots within a Service Area. Calculate the estimated flow needed for the infill using an EDU figure of 250 gallons per day per single-family dwelling**. Add flows for commercial or industrial users, using estimates of use based on zoning and flow projection criteria in MDE's Design Guidelines for Sewerage Facilities. Because of uncertainty of predicting flows from infill development, some municipalities may set aside reserve for infill development. Add to this reserve, previously allocated sewer connections that have not yet come on line and an appropriate I&I reserve, if necessary, to determine **the total reserve capacity**. Subtract the total reserve capacity from the gross available wastewater capacity calculated in number 3 above. This value represents the **available wastewater capacity** that might be allocated for future developments through rezoning and annexations.
5. Determine the **future sewer service needs** based on planned growth, including rezoning and annexations, in keeping with the adopted Comprehensive Land Use Plan. This should take into consideration proposed, preliminary, and final plats.

Local authorities must ensure that the **net available wastewater capacity** is available to meet future sewer service needs. Building permits cannot be issued if wastewater capacity and service is not available. Approval of development plans and subdivision plats must accurately reflect the availability or lack thereof of wastewater service.

## **Guide to Local Process Considerations**

The local governing body should formally adopt an allocation policy and procedure to manage wastewater capacity. There must be a detailed tracking system to determine the disposition of plant capacity. The local planning, DPW, or other responsible agency should maintain this system. This information should be shared among the local agencies involved in the development process. The owner of the WWTP should also contact the appropriate water supply system staff to determine whether there are capacity limitations in the drinking water system.

Each time a subdivision plat is approved and signed by the local approving authority, the sewage capacity needed for that subdivision should be reserved and subtracted from the net available wastewater capacity. Although the “prospective approval” of subdivision plats is permissible, it is not recommended unless there is a very strong indication that a plant expansion and other needed sewerage improvements would be available in time (e.g. the WWTP expansion is under construction and will be completed within six months to one year of plat approval).

WWTP owners must monitor the rate of growth in the service area and their available capacity to plan for future expansions. It is prudent to evaluate the situation regarding available capacity versus capacity demand when flows approach 75-80% of rated design capacity. At this point an engineering firm is typically engaged to evaluate future sewer capacity needs and if necessary, plan/design a facility upgrade or expansion. As part of the planning, the local government should request discharge permit planning limits from MDE well in advance of the proposed expansion.

MDE will work with the local government on issues related to water quality standards, Total Maximum Daily Loadings (TMDLs), Tributary Strategies, Tier II streams (anti-degradation requirements), and any other requirements that will affect the design of the WWTP. Early local actions should include a review/update of the County Comprehensive Plan, and amendment of the Water and Sewerage Plan if needed to reflect the capacity increase.

Once design is complete, a construction permit from MDE is required. Construction permit review and issuance will verify that the proposed facility expansion will meet the State’s Design Guidelines and discharge permit requirements.

**To assist you in completing the analysis, please select one of the Flow Worksheets provided as Figure 1 or Figure 2 in the Appendix or at MDE’s web site.**

## **Controlling Allocation of New Connections to Wastewater Systems**

Some jurisdictions have enacted Adequate Public Facilities Ordinances (APFOs) that establish a process to ensure that development approvals do not outstrip the available infrastructure in that jurisdiction. These jurisdictions should submit copies of their APFO regulations to MDE as well as copies of the periodic tracking reports concerning the allocation of wastewater capacity required by the APFOs.

For those jurisdictions that have not enacted an APFO, there must be a control and accounting system to manage the allocation of wastewater capacity if the jurisdiction is to meet its obligations under 9-512(b) and (d). These jurisdictions should develop and submit a description of their allocation system to MDE for review as well as copies of their periodic tracking reports concerning the allocation of wastewater capacity.

The allocation systems developed by these jurisdictions should include the following actions:

- a. Check adequacy of the wastewater system regularly.
- b. If improvements are needed, require Public Works Agreements as appropriate and bonds for construction before final development approval.
- c. Include notes on subdivision plats indicating that there may not be an allocation available immediately for construction.
- d. If there is no prior right to wastewater capacity, the subdivision plat should notify the prospective purchaser that the wastewater capacity allocation lapses after a specified period of time if not used.
- e. Reserve capacity for connections of failing onsite systems to the sewer system in accordance with the county's water and sewer plan.
- f. For towns with rapid growth but limited available capacity, include a requirement that if an allocation is not used within a specified time, it shall revert to the Town's unallocated capacity.

## **Planning for Wastewater Flows from Future Development**

An estimate of the number of undeveloped lots within an S-1 (existing service) classified sewer service area should be completed using billing accounts, tax maps in conjunction with aerial photography, and/or “windshield” surveys to determine the potential number of new “infill” connections. For areas within a priority funding area (PFA), the lot density of 3.5 lots per acre should be used. In planning for future development in areas programmed for sewer service, the same analysis to determine the number of equivalent dwelling units should be completed, based on existing or planned zoning.

## **Approval of Subdivision Plats**

As stated above, the State law allows the approval of subdivision plats as long as sewerage facilities would be available in time to serve the proposed development. Local governments may approve plats before the necessary infrastructure is in place. The logic is that it takes time for a development project to move from plat to building permit, thereby allowing time for the construction of infrastructure. Small and medium systems can be overwhelmed and subject to legal challenges if plats are approved, developments move forward, and needed wastewater infrastructure is not in place to serve it.

If a wastewater system upgrade is needed to serve a development, a local government may negotiate with a developer to pay for needed improvements. Under this scenario, the improvements can be initiated as soon as funds are provided and proper permits are in place.

If a new development is dependent on a larger upgrade or expansion that will be publicly funded (at least in part), then the local government may not approve the plat unless the capital improvements are under construction and will be completed in one year or less. Municipalities must certify that capacity will be available within a specific period consistent with the municipal code or no later than one year before subdivision plats can be approved. Finally, the local approving authority may require inclusion of cautionary notes on subdivision plats. Such notes may, for example, use the language in 9-206 and prohibit the sale of individual lots to prospective homebuyers until sewer service is available.

### Sunset Provisions for Allocations

The inclusion of sunset provisions in a WWCMP may help local governments avoid situations where an inactive development with sewer allocations is blocking other uses of the allocation. This must be done in accordance with local ordinances, policies, and procedures. Local governments are advised to seek the local attorney’s advice regarding the development of sunset provisions.

## **Defining Wastewater Capacity Overload**

WWTP permit violations or overflows/bypasses from WWTPs and collection systems (sewer lines and pumping stations) often occur due to facility overload. Therefore, adherence to a WWCMP can help avoid adding flow to a system that is in need of repairs or expansion.

This section is intended to assist WWTP owners and operators in understanding how MDE views wastewater system overloads, whether in the plant or in the collection and conveyance system. MDE oversight of WWTPs must conform to EPA criteria for overflows, bypasses, exceeding permit limits, and other enforceable criteria.

In general, if a portion of a sewer system is considered inadequate, but the remaining system is not, the capacity limitation should apply to the service area of the deficient portion only. The following is a guideline to help determine if a WWTP is overloaded or close to being overloaded.

### **Hydraulic Overload**

If a WWTP meets any one of the following conditions, it is considered hydraulically overloaded:

#### **Condition 1**

When a sewage overflow or bypass occurs due to hydraulic limitation:

- (a) during dry weather conditions, or
- (b) four times during the previous six-month period.

#### **Condition 2**

The adjusted daily average flow rate reported for the plant using flows from the last three calendar years exceeds the daily average flow rate used in the discharge permit to establish effluent loading limitations.

#### **Condition 3**

The adjusted daily average flow rate reported for the plant during the last three calendar years is 90% or more of the daily average flow rate used in the discharge permit to establish effluent loading limitations, and in the last three years there have been either effluent violations, bypasses, or sanitary sewer overflows attributed to high flows or flow spikes during storm events.

## **Effluent Permit Limit Overload**

If the WWTP meets any of the following conditions, it is considered out of compliance, possibly due to excessive flows:

### **Condition 1**

The plant is currently in significant non-compliance (SNC) with its discharge permit effluent limitations.

### **Condition 2**

The plant has a pattern of chronic non-compliance with its discharge permit effluent limitations in the last two years, but has not been categorized as SNC, and the causes are related to an inadequate facility or an inability to manage high peak flows without bypassing or adversely impacting treatment processes.

## **Actions on Overload Conditions**

### **Projected Overload**

If the Report shows or if the Department determines that the facility has reached 80% of permitted capacity, or will reach an overload condition within the next 5 years based on projected growth:

- The permittee shall submit a Capacity Management Plan and Municipal Sewage Capacity Report for approval by the Department by March 31st or within 90 days of notification by MDE of its determination.
- If the steps to be taken include planning, design, financing, and construction of a larger sewerage facility, local actions shall be taken, including a review/update of the Comprehensive Plan, and amendment of the Water and Sewerage Plan to be consistent with the capacity increase proposed.
- When a preliminary expansion size has been determined, the local government shall request discharge permit planning limits from the Department based on the new size to use in the planning process. The discharge permit must be issued prior to issuance of a construction permit.
- New connections to and extensions of the sewerage facilities shall be limited by the local government based upon the remaining available capacity consistent with the capacity management plan approved by the Department.

### Existing Overload

If the Report shows, or the Department determines, that the facility has reached an overload condition:

- The permittee shall immediately evaluate the situation regarding the capacity overload to determine its cause and any short term or long-term actions that might be necessary to restore available capacity. If a major upgrade or facility expansion is needed, the municipality shall begin work for planning, design, financing, construction, and operation of the sewerage facilities to meet environmental limits and to provide capacities for anticipated demands for a reasonable time into the future.
- The permittee shall submit to the Department for review and approval a written corrective action plan within 90 days after the determination of capacity overload by the permittee or within 90 days of notification of the Department's determination of overload, whichever occurs first. The plan shall include information on pending connections, descriptions of corrective measures, and the dates by which each step will be completed.
- New connections to the overloaded sewerage facilities and issuance of building permits by a governmental entity that may result in a connection to overloaded sewerage facilities or increase the load to those sewerage facilities from an existing connection must be prohibited except as approved by the permittee under the standards for granting exceptions as listed below.
- The permittee shall retain records of exceptions granted and make the records available to the Department upon request.

### Criteria for New Connections

New connections allowed under WWTP overload conditions shall meet the following criteria:

- The proposed connections to and extensions of the sewerage facilities are both consistent with and controlled in accordance with a consent agreement that includes the corrective action plan submitted by the municipality and approved by the Department.
- The proposed connections to and extensions of the sewerage facilities are consistent with the applicable water and sewer plan and capacity management plan.
- The additional connections will not cause an increase in the frequency or volume of sanitary sewer overflows or violation of discharge permit limitations.
- The proposed connections to and extensions of the sewerage facilities are in accordance with any other applicable requirement of the Environment Article.

# APPENDICES

<b>FLOW CALCULATION TABLES</b> .....	21
TABLE I - Flow Projection Based Upon Gallons per Person per Day .....	21
TABLE II - Guiding Factors for Flow Projection Related with Commercial Establishments, Public Service Buildings, or Dwelling Units .....	23
TABLE III - Flow Projection for Country Clubs .....	23
TABLE IV - Flow Projection for Public Parks .....	24
<b>ALLOCATION WORKSHEETS AND PROCEDURES</b> .....	25
EXAMPLE: Three-Year Avg. Ann. Allocations Issued for Customers Served by WWTP .....	26
EXAMPLE: Monitoring and Control of Sewage Flows and Allocation Approvals Representing Future Flows.....	27
EXAMPLE: WWTP Available Capacity Report .....	29
EXAMPLE: Allocation Procedures.....	30
<b>EXAMPLES OF <u>COMPLETED</u> FLOW WORKSHEETS AND CAPACITY REPORTS</b> .....	33
Content of Municipal Sewage Capacity Reports.....	35
<u>Estimated Wastewater Treatment Plant Flow</u>	
COMPLETED WORKSHEET - Fig. 1: Worksheet Style One.....	37
COMPLETED WORKSHEET - Fig. 2: Worksheet Style Two.....	38
COMPLETED REPORT - Municipal Sewage Capacity Report.....	39
<b><u>BLANK</u> WORKSHEETS AND CAPACITY REPORT FORMS</b> .....	41
<u>Estimated Wastewater Treatment Plant Flow</u>	
Fig. 1: Worksheet Style One .....	43
Fig. 2: Worksheet Style Two .....	44
Municipal Sewage Capacity Report .....	45

The **WORKSHEETS** and **CAPACITY FORMS** in the Appendix may be used by permittees to determine current flow and remaining wastewater capacity, and to develop a system of flow allocation for the WWTP. These materials are also available at MDE's web site.

**[www.mde.state.md.us](http://www.mde.state.md.us)**

## FLOW CALCULATION TABLES

**Table I - Flow Projection Based Upon Gallons Per Person Per Day**

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Airports (per passenger) .....	5
Apartments-multiple family (per resident) .....	60
Bathhouses and swimming pools.....	10
Camps:	
Campground with central comfort stations.....	35
With flush toilets, no showers .....	25
Day camps (no meals served) .....	15
Resort camps (night and day) with limited plumbing .....	50
Luxury camps .....	100
Cottages and small dwellings with seasonal occupancy .....	50
Country clubs (per resident member).....	100
Country clubs (per non-resident member present).....	25
Dwellings:	
Boarding houses.....	50
additional for non-resident boarders .....	10
Luxury residences and estates .....	150
Multiple family dwellings (apartments).....	60
Rooming houses.....	40
Single family dwellings.....	75-100
Factories (gallons per person, per shift, exclusive of industrial wastes) .....	35
Hospitals (per bed space) .....	350
Hotels with private baths (2 persons per room).....	60
Hotels without private baths .....	50
Institutions other than hospitals (per bed space).....	125
Laundries, self-service (gallons per wash, i.e., per customer) .....	50
Mobile home parks (per space).....	250
Motels with bath, toilet and kitchen wastes (per bed space) .....	50
Motels (per bed space) .....	40
Picnic Parks (toilet wastes only) (per picnicker) .....	5
Picnic Parks with bathhouses, showers and flush toilets .....	10
Restaurants (per seat) .....	25
Restaurants (toilet and kitchen wastes per patron) .....	10
Restaurants (kitchen wastes per meal served) .....	3
Restaurants, additional for bars and cocktail lounges.....	2

**Table I (Continued)**

Type of Establishment	Gallons Per Person Per Day (Unless Otherwise Noted)
Schools:	
Boarding .....	100
Day, without gyms, cafeterias or showers .....	15
Day, with gyms, cafeterias and showers.....	25
Day, with cafeterias, but without gyms or showers .....	20
Service Stations (per vehicle served).....	10
Swimming pools and bathhouses .....	10
Theaters:	
Movie (per auditorium seat).....	1
Drive-in (per car space) .....	5
Travel Trailer Parks without individual water and sewer hook-ups (per space) .....	50
Travel Trailer Parks with individual water and sewer hook-ups (per space) .....	100
Workers:	
Construction (at semi-permanent camps).....	50
Day, at schools and offices (per shift).....	15

An alternative method used to project average daily flows generated from commercial establishments, public service buildings, or dwelling units can be figured on the basis of total floor area, number of building units, or service seats multiplied by a statistical factor. Guiding factors are given in Table II.

**Table II - Guiding Factors for Flow Projection Related with Commercial Establishments, Public Service Buildings, or Dwelling Units**

Office Buildings .....	Gross Sq. Ft. x 0.09 =	gpd
Medical Office Buildings .....	Gross Sq. Ft. x 0.62 =	gpd
Warehouses .....	Gross Sq. Ft. x 0.03 =	gpd
Retail Stores .....	Gross Sq. Ft. x 0.05 =	gpd
Supermarkets .....	Gross Sq. Ft. x 0.20 =	gpd
Drug Stores .....	Gross Sq. Ft. x 0.13 =	gpd
Beauty Salons .....	Gross Sq. Ft. x 0.35 =	gpd
Barber Shops .....	Gross Sq. Ft. x 0.20 =	gpd
Department Store with Lunch Counter .....	Gross Sq. Ft. x 0.08 =	gpd
Department Store without Lunch Counter .....	Gross Sq. Ft. x 0.04 =	gpd
Banks .....	Gross Sq. Ft. x 0.04 =	gpd
Service Stations .....	Gross Sq. Ft. x 0.18 =	gpd
Laundries & Cleaners .....	Gross Sq. Ft. x 0.31 =	gpd
Laundromats .....	Gross Sq. Ft. x 3.68 =	gpd
Car Wash without Wastewater Recirculation Equipment... ..	Gross Sq. Ft. x 4.90 =	gpd
Hotels .....	Gross Sq. Ft. x 0.25 =	gpd
Motels .....	Gross Sq. Ft. x 0.23 =	gpd
Dry Goods Stores .....	Gross Sq. Ft. x 0.05 =	gpd
Shopping Centers .....	Gross Sq. Ft. x 0.18 =	gpd

Flow projection for country clubs or public parks may be made on the basis of plumbing fixtures.

The related statistical flow figures per unit of plumbing fixture are shown in Table III and Table IV.

**Table III - Flow Projection for Country Clubs**

Type of Fixture	Gallons Per Day Per Fixture
Showers .....	500
Baths .....	300
Lavatories .....	100
Toilets .....	150
Urinals .....	100
Sinks .....	50

**Table IV - Flow Projection for Public Parks**  
(During hours when park is open)

<u>Type of Fixture</u>	<u>Gallons Per Day Per Fixture</u>
Flush toilets .....	35
Urinals .....	10
Showers .....	100
Faucets .....	15

Average Daily Flow

Average daily flow is the arithmetic sum of the average daily domestic flow plus the average daily commercial flow plus the average daily industrial flow plus any other average daily flow from the service area. The average daily commercial, industrial, and other flows shall be based on the period in which these flows are generated.

Peaking of Flows

Peak flow is the average daily domestic flow peaked in accordance with the curve entitled “Diagram for Converting Average Daily Domestic Flow to Peak Flow”. (Page 1-7 of the *Design Guidelines for Sewerage Facilities*, Maryland Department of Health and Mental Hygiene, 1978).

Peak commercial or industrial flow is the average daily commercial or industrial flow peaked in accordance with a factor determined by evaluation of historical data for the commercial or industrial facilities and the periods in which these flows are generated.

The average daily domestic flow, average daily commercial flow, and average daily industrial flow may be peaked individually or combined and then peaked using the curve (Page 1-7 of the *Design Guidelines for Sewerage Facilities*) as dictated by the evaluation of the sources and periods in which the flows are generated.

Wherever forced flow applies, peak flow shall be equivalent to the pumping rate.

Infiltration and Inflow

For design purposes, the upper limit of allowable infiltration and inflow within the areas of the project is 400 gallons per acre per day (gpad). Additional allowance for infiltration and inflow may be made upon verification of evidence or approval of operation data.

Design Hydraulic Flow

$$\text{Design Hydraulic Flow} = \text{Peak Flow} + \text{Peak Commercial Flow} + \text{Peak Industrial Flow} + \text{Infiltration and Inflow Allowance}$$

# **EXAMPLES OF ALLOCATION WORKSHEETS AND PROCEDURES**

These ALLOCATION WORKSHEETS and PROCEDURES are provided as examples to use in designing your own forms to collect the required data.

**EXAMPLE**

**Three-year Average Annual Allocations Issued for Customers Served  
by the \_\_\_\_\_ Wastewater Treatment Plant**

<b>S-1 Service Area</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>Three-year Average Annual Total</b>
Within City				
Outside City				
<b>Joint Service Area</b>				

<b>S-1 Service Area</b>	<b>WITHIN CITY</b>		<b>OUTSIDE CITY</b>		<b>JOINT SERVICE AREA</b>	
	<b>Gallons (mgd)</b>	<b>% of Allocation</b>	<b>Gallons (mgd)</b>	<b>% of Allocation</b>	<b>Gallons (mgd)</b>	<b>% of Allocation</b>
<b>2004</b>						
Residential Non- residential Total						
<b>2005</b>						
Residential Non- residential Total						
<b>2006</b>						
Residential Non- residential Total						
<b>2007 Six-month Reporting Period</b>						
Residential Non- residential Total						

**EXAMPLE: MONITORING AND CONTROL OF SEWAGE FLOWS  
AND ALLOCATION APPROVALS REPRESENTING FUTURE FLOW**

Facility: \_\_\_\_\_ Date: \_\_\_\_\_

	Area A	Area B	Area C	Area D	Area E
Plat Approvals					
Building Permits					

Available WWTP Capacity					
Additional Capacity in the County W/S Plan					
<b>Total Capacity = AC + W/SPC</b>					
Existing S-1 Flow					
<b>Remaining Available For Plat Commitment = TC – EF gpd</b>					
Record Plat Commitment MGD					
Record Plat Units (EDUs) gpcd					
<b>Effective Record Plat Commitments = RPC/EDUs</b>					
<b>Net Capacity Available For Additional Plats = RAC - RPC</b>					

AC – Available Capacity

W/SPC – Water/Sewer Plan Capacity

TC – Total Capacity

EF – Existing Flow

RPC – Record Plat Commitment

RAC – Remaining Available Ca

(Page 28: This page is intentionally blank)

**EXAMPLE**

**WASTEWATER TREATMENT FACILITY  
AVAILABLE CAPACITY REPORT**

Name of Facility: \_\_\_\_\_

Date: \_\_\_\_\_

Treatment Plant Design Capacity (MGD): \_\_\_\_\_

Permitted Flow Capacity (MGD): \_\_\_\_\_

Less Estimated I&I (MGD): \_\_\_\_\_

Gross Available Capacity:  
in millions of gallons per day (MGD) \_\_\_\_\_ (1)

Less: Plant's previous 3-year average flow in MGD (2004, 2005, 2006) \_\_\_\_\_

Less: Outstanding Service Commitments  
(Current total properties of record) \_\_\_\_\_ (2)

Available Capacity as of January 1, 2007 \_\_\_\_\_ (3)

(1) As determined by MDE January 1, 2003

(2) Based upon recording of final plat, 250 GPD per Single Family Home, 200 GPD for Senior Housing Dwelling, 1,000 GPD per Commercial lot, 5,000 GPD per Industrial lot.

(3) No more than \_\_\_% of this available capacity to be allocated to one applicant, property, subdivision, or project.

(4) Current Number of Vacant Residential Lots of Record \_\_\_\_\_

(5) Current Number of Vacant Commercial Lots \_\_\_\_\_

(6) Current Number of Vacant Industrial Lots \_\_\_\_\_

## EXAMPLE

### ALLOCATION PROCEDURES

#### ONE TOWN'S RESIDENTIAL SANITARY SEWER TAP SYSTEM CONNECTION ALLOCATION PLAN

1. Sewer system connection (tap) permits can only be applied for by the property owner or with the written permission of the property owner.
2. This plan controls the issuing of new or additional residential taps and/or sanitary sewer system connections or the equivalent thereof as related to flow volumes and/or fixture chart count equivalents.
3. On September 1 (or any date set by the Mayor & Council) of each year, the Town staff will determine the total number of approved and/or buildable residential housing units/lots available for construction (this would be any unit or lot which has met all other requirements necessary to receive a zoning certificate). **(150)**
4. The total number of residential taps and/or sanitary sewer system connections or the equivalents thereof as outlined in item number 3 of this document will be twenty per year. **(20)**
5. An allocation 'tap/connection factor' will be determined as follows: Take the number of taps to be issued **(20)** and divide that number by the total number of approved/building residential housing units/lots as of September 1 **(150)** and the result (0.133333) is the 'tap/connection factor'.

$$20 \div 150 = 0.133333$$

6. Then multiply the 'tap/connection factor' by the total number of approved/buildable residential housing units/lots in any subdivision or approved plan to determine the number of taps available to that subdivision or project for that allocation year (if that product is 0.5 or greater it is rounded up, if the product is less than 0.5 it is rounded down).

$$46 \text{ lots/units} \times 0.133333 = 6.133$$

equals a tap and/or **connection allocation number of six (6)**

7. Residential taps and/or sanitary sewer system connections will be made available on September 15 of each year and those not purchased or reserved by November 15 will become available to other interested parties on December 1 on a first-come, first-served basis.
8. On multiple family projects such as condos, apartments, and town houses, the owner or owners can **apply for their annual allocation** of residential taps and/or sanitary sewer system connections and **reserve (hold)** same for **up to three (3) years** (after which the tap/connection becomes null and void and the deposit is forfeited) **by paying a \$0,000.00 non-refundable deposit fee** (per tap or equivalent thereof) **thereby obtaining the number of taps necessary to construct a multi-unit building or project.** Said deposit fee will be applied to the total tap and/or connection fee and/or associated costs when the tap or taps are issued.

**These Allocation Procedures do not change or alter any other requirement or provision of the tap and/or sanitary sewer system connection process.**

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**EXAMPLES OF COMPLETED  
FLOW WORKSHEETS AND CAPACITY REPORTS**

Content of Municipal Sewage Capacity Reports

Estimated Wastewater Treatment Plant Flow - Worksheet Style One

Estimated Wastewater Treatment Plant Flow - Worksheet Style Two

Municipal Sewage Capacity Report

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## **CONTENT OF MUNICIPAL SEWAGE CAPACITY REPORTS**

The required report is intended to allow the WWTP owner to demonstrate that there is a Capacity Management Plan and implementation procedures to track and manage wastewater allocations in the service area.

### **What Must Be Reported (in Figs. 1 or 2, and in the Capacity Report)**

- Treatment Plant's name, location, and rated capacity/design flow.
- Treatment Plant's current flow based on the previous 3-year average.
- Number of subdivision plat approvals and total number of lots.
- Number of residential lots on approved plats that have not applied for building permits.
- Number of commercial lots on approved plats that have not applied for building permits.
- Number of building permits currently approved but not connected.
- Total amount of potential flow (GPD) for building permits not connected.
- Three-year average base flow and I&I added to flow for building permits not connected.
- Three-year average base flow and I&I added to building permits not connected added to approved prospective record plat flow.
- Number of proposed future connections during this reporting period.
- Total amount of additional flow represented by proposed future connections.
- Available treatment plant flow capacity remaining upon completion of proposed future connections.
- Do flows from future connections and existing flow exceed determined flow?
- The "ultimate" flow capacity required if "build-out" of the town/city would occur based on the latest approved land use/zoning in the adopted master plan (as amended) for this reporting period.
- Are there any planned WWTPs or sewer system upgrades, expansions, or improvements decided on during this reporting period?
- Are there any moratoriums or limitations on new building permit approvals currently in place?

### **Reporting Procedures**

- Develop suitable allocation charts (use the provided allocation examples) for your routine in-house use. The current data generated will be used to complete the required annual “Municipal Sewage Capacity Report”.
- Complete the annual “Municipal Sewage Capacity Report” when required.
- Submit the reports to MDE, with the signatures of the owner/operator (elected official) and the Engineer or Facility Manager’s designated person.

**Estimated Wastewater Treatment Plant Flow**

**Figure 1: Worksheet Style One**

DATE: \_\_\_\_\_

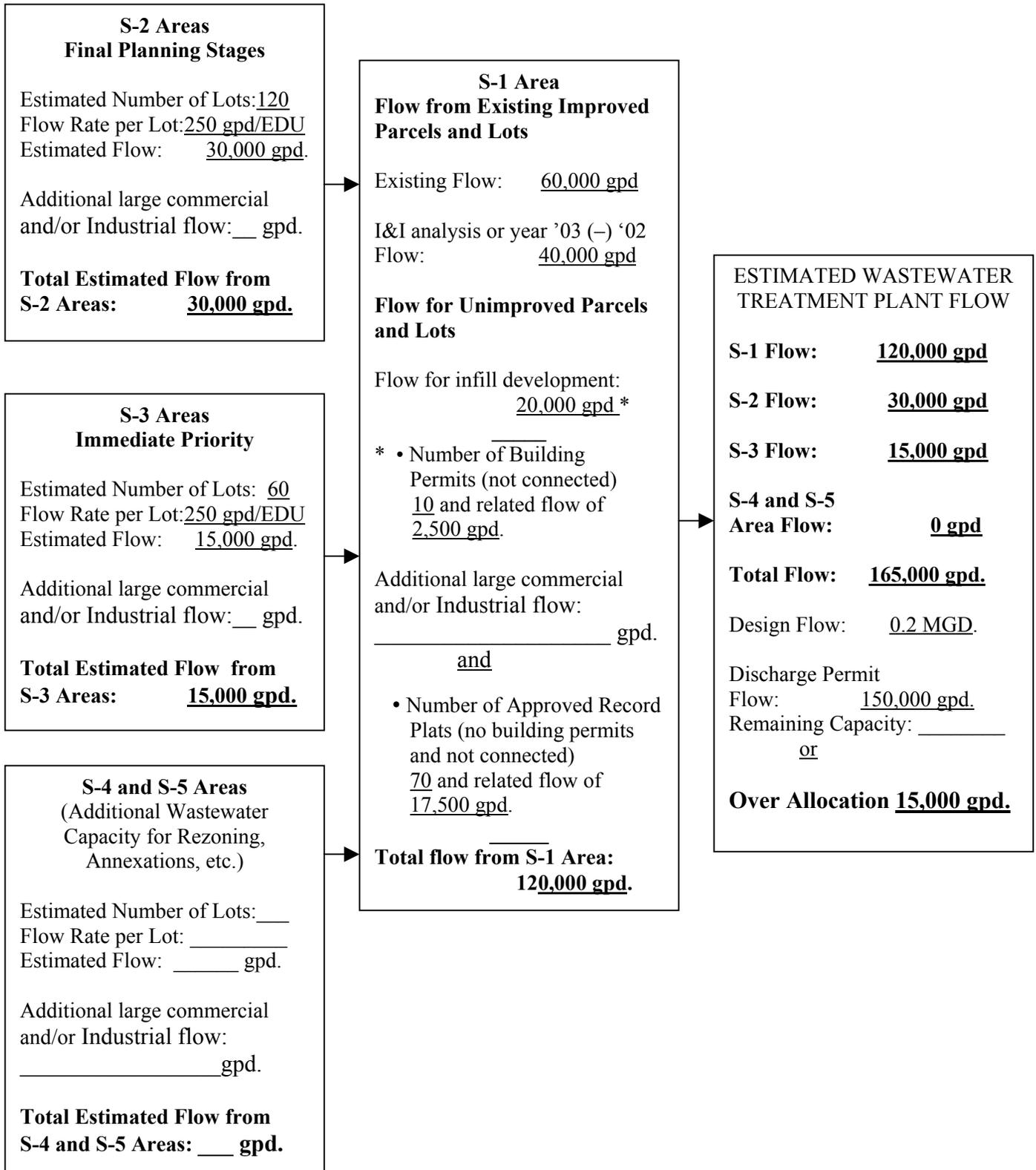


Figure 2: Worksheet Style 2

Date: \_\_\_\_\_

<b>REVIEW OF WASTEWATER TREATMENT CAPACITY</b>			
	Facility: _____ <b>Rated Capacity (Design Flow): 0.2 MGD</b>	A. CALCULATIONS GPD	B. VALUES GPD
1	National Pollutant Discharge Elimination System (NPDES) <b>Permitted Flow</b> (list in column B1)	XXX	150,000
2	2003 Daily Avg. Flow of Wastewater (list in column A1)	120,000	XXX
3	2002 Daily Average Flow of Wastewater (list in column A1)	70,000	XXX
4	Estimated Inflow and Infiltration Flow impacting the Wastewater Treatment Facility (Subtract line 3 from line 2; report in A4 and B4). Or the I/I analysis from in-pipe monitoring and hydraulic modeling.	40,000	40,000
5	Remaining capacity for existing and future wastewater flow. (Subtract B4 from B1; report in column B5)	XXX	110,000
<b>Calculating Existing and Encumbered S-1 Infill Flow</b>			
6	Existing (current flow without I&I) S-1 Flow <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	60,000	XXX
7	Estimated encumbered flow <u>approved S-1 Building Permits not connected.</u> (Number of EDUs x flow rate per EDU) Add additional large commercial and/or industrial flow. <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	(10X250)=2,500 Plus any commercial and/or industrial flow: <u>0</u> Total: 2,500	XXX
8	Estimated encumbered flow from <u>approved S-1 Record Plats for Infill Lots having no building permits.</u> (Number of EDUs x flow rate per EDU) Add additional large commercial and/or Industrial flow. <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	(70X250)=17,500 Plus any commercial and/or industrial flow: <u>0</u> Total: 17,500	XXX
9	Allocated Capacity for Existing and Potential Infill Flows (Total S-1 Flow less I&I and report in A9 and B9)	80,000	80,000
10	Subtract B9 from B5 and report current remaining capacity in B10.	XXX	30,000
<b>Estimating Future S-2 and S-3 Flow</b>			
11	Estimated Future Flows from S-2 and S-3 classified areas. (Number of EDUs x flow rate per EDU) Add additional large commercial and/or Industrial flow. <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	(180X250)=45,000 Plus any commercial and/or industrial flow: <u>0</u> Total: 45,000	XXX
12	Add A9 + A11; report in A12.	125,000	XXX
13	Estimated I&I Flow or I/I Analysis Value (Report value provided from B4)	40,000	XXX
14	Determine Future Capacity Needs: Add A12 and A13. If value exceeds B1, report over-allocation in B14.	165,000	15,000
15	Report Available Capacity: Subtract A14 from B1, if A14 exceeds B1, report 0 in B15 and see notification below.		0
<b>Report over-allocation (Subtract A14 from B1)</b>		<b>15,000</b>	<b>GPD *</b>

**NOTE:** If there is a reported negative value for the remaining capacity allocation, please contact MDE for assistance.

# MUNICIPAL SEWAGE FLOW CAPACITY REPORT

## REPORTING

\_\_\_ First report due January 31, 2005 for all of calendar year 2004 to establish a current "base line" for WWTPs at or exceeding 75% of permitted capacity.

\_\_\_ WWTP under Consent Order with EPA/DOJ and/or MDE or \_\_\_ NPDES Permit Renewal

Date of this report: \_\_\_\_\_ **JANUARY 31, 2005 for CALENDAR YEAR 2004**

Municipal wastewater treatment plant name: \_\_\_\_\_ **THE FACILITY**

Permit issued to: \_\_\_\_\_ **THE COUNTY AND ETC.**

County where plant is located: \_\_\_\_\_ **THE COUNTY**

NPDES wastewater discharge permit number: \_\_\_\_\_ **NUMBER**

State wastewater discharge permit number: \_\_\_\_\_ **NUMBER**

Facility address: \_\_\_\_\_ **SITE LOCATION ADDRESS**

Name/title of individual completing form: \_\_\_\_\_ **YOUR NAME HERE**

Name/title or position of person certifying this form: \_\_\_\_\_ **COUNTY ENGINEER ETC.**

Contact person's name and telephone number: \_\_\_\_\_ **XXX XXX-XXXX**

Mailing address if different from facility address: \_\_\_\_\_ **OWNER/OPERATOR**

## QUESTIONS:

1. Rated/Design Flow: **0.2 MGD** and Current Permitted Flow: **0.150 MGD or 150,000 GPD**
2. Annual average flow in MGD for each of the three (3) complete previous calendar years:  
Year 02 Flow/MGD: **0.070** Year 03 Flow/MGD: **0.120** Year 04 Flow/MGD: **0.110**  
3-year Avg. = **0.100 MGD**
3. Gallons and EDUs used to determine the flow contribution for building permits issued per structure: (Ex: 250 gallons per EDU: 100 gpcd X 2.5 persons per dwelling) **250 gpd/EDU**
4. Number of S-1 building permits currently approved but not connected to the WWTP:  
(residential, commercial, institutional, and industrial) **10**
5. Total amount of additional flow in gallons represented by approved S-1 building permits that have not been connected to date: (actual flow pending on a period of time and estimated flow based on Town Master Plan) **2,500 gpd**
6. Potential flow when the flow from approved S-1 building permits (not connected) is added to the actual annual average plant flow in MGD for the last three (3) complete years:  
**0.1025 MGD.**

- 7. Number of residential lots on approved S-1 record plats that have not applied for building permits and associated flow: *(when recorded lots apply for permits, they must be subtracted from the record plat totals so as to not double count)*. 70 (70x250=17,500 gpd or 0.0175 MGD)
- 8. Number of commercial lots on approved S-1 record plats that have not applied for building permits and associated flow \_\_\_\_\_ 0
- 9. Three-year average annual flow 0.100 MGD (+) S1 building permits flow 0.0025 MGD (+) prospective S1 record plat flow 0.0175 MGD (=) 0.120 MGD
- 10. Were there any effluent violations, overflows, bypasses, and causes reported to MDE (DMRs, Violation Notices and 5-day Letters) associated with excessive flow at the WWTP and/or with the sewer system(s) that occurred during this reporting period? \_\_ (Y) X (N)
- 11. Are there any planned WWTPs or sewer system upgrades, expansions, or improvements decided on during this reporting period \_\_\_\_\_ (Y) X (N) Completion date N/A  
Impact to flow and flow capacity \_\_\_\_\_ MGD
- 12. Number of proposed future connections (S-2 & S-3) during this reporting period: \_\_\_\_\_ 180
- 13. Amount of additional flow represented by proposed future connections (S-2 & S-3) described above: \_\_\_\_\_ 0.045 MGD
- 14. Available treatment plant flow capacity remaining upon completion of proposed future connections (S-2 & S-3) described above: \_\_\_\_\_ (-) 0.015 MGD
- 15. Do flows from future connections and existing flow exceed determined flow?  
X (Y) \_\_\_\_\_ (N)
- 16. Are there any moratoriums or limitations on new building permit approvals currently in place? \_\_\_\_\_ (Y) X (N) Date enacted: \_\_\_\_\_ Expiration date: \_\_\_\_\_
- 17. What is the “ultimate” flow capacity required if “build-out” of the town/city would occur based on the latest approved land use/zoning in the adopted master plan (as amended) for this reporting period? \_\_\_\_\_ 165,000 GPD

**SIGNATURE**

ENGINEER, FACILITY MANAGER,  
or DESIGNEE

\_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**PERMITTEE**

FACILITY OWNER / OPERATOR  
COUNTY / CITY (ELECTED OFFICIAL)

\_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_

**BLANK WORKSHEETS AND FORMS**  
**FOR COMPLETING THE**  
**MUNICIPAL SEWAGE CAPACITY REPORT**

Select either Flow Worksheet 1 or Worksheet 2.

Complete the selected Worksheet.

Transfer the data to the Municipal Sewage Capacity Report Form.

Complete the Municipal Sewage Capacity Report.

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# Estimated Wastewater Treatment Plant Flow

**Figure 1: Worksheet Style One**

DATE: \_\_\_\_\_

<p align="center"><b>S-2 Areas Final Planning Stages</b></p> <p>Estimated Number of Lots: _____          Flow Rate per Lot: _____ gpd./EDU          Estimated Flow: _____ gpd.</p> <p>Additional large commercial and/or Industrial flow: _____ gpd.</p> <p><b>Total Estimated Flow from S-2 Areas: _____ gpd.</b></p>	<p>→</p> <p>→</p> <p>→</p>	<p align="center"><b>S-1 Area Flow from Existing Improved Parcels and Lots</b></p> <p>Existing Flow: _____ gpd.</p> <p>I&amp;I analysis or year '03(-)'02 Flow: _____ gpd.</p> <p><b>Flow for Unimproved Parcels and Lots</b></p> <p>Flow for infill development: _____ gpd. *</p> <p>* • Number of Building Permits (not connected) _____ and related flow of _____ gpd</p> <p>Additional large commercial and/or Industrial flow: _____ gpd.</p> <p align="center"><u>and</u></p> <p>• Number of Approved Record Plats (no building permits and not connected) _____ and related flow of _____ gpd.</p> <p><b>Total flow from S-1 Areas: _____ gpd.</b></p>	<p>→</p>	<p align="center"><b>ESTIMATED WASTEWATER TREATMENT PLANT FLOW</b></p> <p><b>S-1 Flow:</b> _____ gpd.</p> <p><b>S-2 Flow:</b> _____ gpd.</p> <p><b>S-3 Flow:</b> _____ gpd.</p> <p><b>S-4 and S-5 Area Flow:</b> _____ gpd.</p> <p><b>TOTAL:</b> _____ gpd.</p> <p>Design Flow: _____ gpd.</p> <p>Discharge Permit Flow: _____ gpd.</p> <p>Remaining Capacity: _____  <u>or</u>  <b>Over Allocation:</b> _____ gpd.</p>
<p align="center"><b>S-3 Areas Immediate Priority</b></p> <p>Estimated Number of Lots: _____          Flow Rate per Lot: _____ gpd/EDU          Estimated Flow: _____ gpd.</p> <p>Additional large commercial and/or Industrial flow: _____ GPD.</p> <p><b>Total Estimated Flow from S-3 Areas: _____ gpd.</b></p>		<p>→</p>	<p>→</p>	<p>→</p>
<p align="center"><b>S-4 and S-5 Areas (Additional Wastewater Capacity for Rezoning, Annexations, etc.)</b></p> <p>Estimated No. of Lots: _____          Flow Rate per Lot: _____ gpd/EDU          Estimated Flow: _____ gpd.</p> <p>Additional large commercial and/or Industrial flow: _____ gpd.</p> <p><b>Total Estimated Flow from S-4 and S-5 Areas: _____ gpd.</b></p>		<p>→</p>	<p>→</p>	<p>→</p>

**Figure 2: Worksheet Style Two**

**DATE:** \_\_\_\_\_

<b>REVIEW OF WASTEWATER TREATMENT CAPACITY</b>			
	Facility: _____ <b>Rated Capacity (Design Flow) MGD</b>	<b>A. CALCULATIONS GPD</b>	<b>B. VALUES GPD</b>
1	National Pollutant Discharge Elimination System (NPDES) <b>Permitted Flow</b> (list in column B1)	XXX	
2	2003 Daily Average Flow of Wastewater (list in column A1)		XXX
3	2002 Daily Average Flow of Wastewater (list in column A1)		XXX
4	Estimated Inflow and Infiltration Flow impacting the Wastewater Treatment Facility (Subtract line 3 from line 2; report in A4 and B4). Or the I/I analysis from in-pipe monitoring and hydraulic modeling.		
5	Remaining capacity for existing and future wastewater flow. (Subtract B4 from B1; report in column B5)	XXX	
<b>Calculating Existing and Encumbered S-1 Infill Flow</b>			
6	Existing (current flow without I&I) S-1 Flow <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>		XXX
7	Estimated encumbered flow <u>approved S-1 Building Permits not connected.</u> (Number of EDUs x flow rate per EDU) Add additional large commercial and/or industrial flow. <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	( X250)= Plus any commercial and/or industrial flow: _____ Total:	XXX
8	Estimated encumbered flow from <u>approved S-1 Record Plats for Infill Lots having no building permits.</u> (Number of EDUs x flow rate per EDU) Add additional large commercial and/or Industrial flow. <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	( X250)= Plus any commercial and/or industrial flow: _____ Total:	XXX
9	Allocated Capacity for Existing and Potential Infill Flow (Total S-1 Flow less I&I and report in A9 and B9)		
10	Subtract B9 from B5 and report current remaining capacity in B10.	XXX	
<b>Estimating Future S-2 and S-3 Flow</b>			
11	Estimated Future Flows from S-2 and S-3 classified areas. (Number of EDUs x flow rate per EDU) Add additional large commercial and/or Industrial flow. <b>(Use Planning Sheet provided as Figure 1 to calculate)</b>	( X250)= Plus any commercial and/or industrial flow: _____ Total:	XXX
12	Add A9 + A11; report in A12.		XXX
13	Estimated I&I Flow or I/I Analysis Value (Report value provided from B4)		XXX
14	Determine Future Capacity Needs: Add A12 and A13. If value exceeds B1, report over-allocation in B14.		
15	Report Available Capacity: Subtract A14 from B1, if A14 exceeds B1 report 0 in B15 and see notification below.		
<b>Report over-allocation (Subtract A14 from B1)</b>		<b>(-) *</b>	<b>GPD</b>

**NOTE:** If there is a reported negative value for the remaining capacity allocation, please contact MDE for assistance.

## MUNICIPAL SEWAGE FLOW CAPACITY REPORT

### REPORTING:

\_\_\_ First report due Jan. 31, 2005 for all of calendar year 2004 to establish a current “base line” for WWTPs at or exceeding 75% of permitted capacity.

\_\_\_ WWTP under Consent Order with EPA/DOJ and/or MDE or \_\_\_ NPDES Permit Renewal.

Date of this report: \_\_\_\_\_ **JANUARY 31, 2005 for CALENDAR YEAR 2004**

Municipal wastewater treatment plant name: \_\_\_\_\_ **THE FACILITY**

Permit issued to: \_\_\_\_\_ **THE COUNTY AND ETC.**

County where plant is located: \_\_\_\_\_ **THE COUNTY**

NPDES wastewater discharge permit number: \_\_\_\_\_ **NUMBER**

State wastewater discharge permit number: \_\_\_\_\_ **NUMBER**

Facility address: \_\_\_\_\_ **SITE LOCATION ADDRESS**

Name/title of individual completing form: \_\_\_\_\_ **YOUR NAME HERE**

Name/title or position of person certifying this form: \_\_\_\_\_ **COUNTY ENGINEER ETC.**

Contact person’s name and telephone number: \_\_\_\_\_ **XXX XXX-XXXX**

Mailing address if different from facility address: \_\_\_\_\_ **OWNER/OPERATOR**

### QUESTIONS:

1. Rated/Design Flow: \_\_\_\_\_ and Current Permitted Flow: \_\_\_\_\_
2. Annual average flow in MGD for each of the three (3) complete previous calendar years:  
Year 02 Flow/MGD: \_\_\_ Year 03 Flow/MGD: \_\_\_ Year 04 Flow/MGD: \_\_\_ 3-year Avg. \_\_\_ MGD
3. Gallons and EDUs used to determine the flow contribution for building permits issued per structure: (*Example: 250 gallons per EDU: 100 gallons per person per day X 2.5 persons per dwelling*) \_\_\_\_\_
4. Number of S-1 building permits currently approved but not connected to the WWTP: (*residential, commercial, institutional, and industrial*) \_\_\_\_\_
5. Total amount of additional flow in gallons represented by approved S-1 building permits that have not been connected to date: (*actual flow pending on a period of time and estimated flow based on Town Master Plan*) \_\_\_\_\_
6. Potential flow when the flow from approved S-1 building permits (not connected) is added to the actual annual average plant flow in MGD for the last three (3) complete years:  
\_\_\_\_\_

7. Number of residential lots on approved S-1 record plats that have not applied for building permits and associated flow: *(When recorded lots apply for permits, they must be subtracted from the record plat totals so as to not double count)* \_\_\_\_\_
8. Number of commercial lots on approved S-1 record plats that have not applied for building permits and associated flow: \_\_\_\_\_
9. Three-year average annual flow \_\_\_\_\_ (+) S1 building permits flow \_\_\_\_\_  
(+) prospective S1 record plat flow \_\_\_\_\_ (=) \_\_\_\_\_
10. Were there any effluent violations, overflows, bypasses, and causes reported to MDE (DMRs, Violation Notices, and 5-day Letters) associated with excessive flow at the WWTP and/or with the sewer system(s) that occurred during this reporting period?  
\_\_\_\_(Y) \_\_\_\_ (N)
11. Are there any planned WWTPs or sewer system upgrades, expansions, or improvements decided on during this reporting period? \_\_\_\_ (Y) \_\_\_\_ (N) Completion date \_\_\_\_\_  
Impact to flow and flow capacity \_\_\_\_\_ MGD
12. Number of proposed future connections (S-2 & S-3) during this reporting period: \_\_\_\_\_
13. Amount of additional flow represented by proposed future connections (S-2 & S-3) described above: \_\_\_\_\_
14. Available treatment plant flow capacity remaining upon completion of proposed future connections (S-2 & S-3) described above: \_\_\_\_\_
15. Do flows from future connections and existing flow exceed determined flow?  
\_\_\_\_ (Y) \_\_\_\_ (N)
16. Are there any moratoriums or limitations on new building permit approvals currently in place? \_\_\_\_ (Y) \_\_\_\_ (N) Date enacted: \_\_\_\_\_ Expiration date: \_\_\_\_\_
17. What is the “ultimate” flow capacity required if “build-out” of the town/city would occur based on the latest approved land use/zoning in the adopted master plan (as amended) for this reporting period? \_\_\_\_\_

**SIGNATURE:**

ENGINEER, FACILITY MANAGER,  
or DESIGNEE

\_\_\_\_\_  
Title: \_\_\_\_\_

Date: \_\_\_\_\_

**PERMITTEE:**

FACILITY OWNER / OPERATOR  
COUNTY / CITY (ELECTED OFFICIAL)

\_\_\_\_\_  
Title: \_\_\_\_\_

Date: \_\_\_\_\_