



## WATER BALANCE PROGRAM

The Applicant should be aware that the withdrawal of the water resources from the Commonwealth of Massachusetts to serve Hingham, Hull, and North Cohasset are regulated and limited by the Massachusetts Department of Environmental Protection (MassDEP). In order to manage these water withdrawals within the limits established, regulated, and enforced by the MassDEP, and in order for Weir River Water System (WRWS) to maintain the ability to supply water to its existing customers, water usage for new developments and the expansion of existing uses must be offset through the Water Balance Program (WBP). In order to approve your request for service you must complete the WBP application in full and submit it with your "Water Service Application".

The Water Balance Program applies to all new and expanded water use projects except; (1) a single family residential housing unit limited to 3 bedrooms and a single service connection and (2) new, expansion, or retrofit building projects resulting in new usage or expanded usage projected that requires less than an additional 100,000 gallons per year (274 gallons per day, (the "WBP Threshold") of water in accordance with the case examples on pages 3-4 of this application.

<b>Part 1 - Applicant's Information</b>						
Applicant's Name				Date		
Service Address				Town		
Email Address				Cell Phone		
Mailing Address				Other Phone		
	City		State		Zip Code	

<b>Part 2 - Engineer's Information (if applicable)</b>							
Company Name					Office Phone		
Contact Name					Cell Phone		
Email Address					Fax Number		
Mailing Address		City		State		Zip	
Brief Project Narrative							

<b>Part 3A - Water Demand Information - Residential Only</b>				Total Square Footage			
Number of Units		Total Bedrooms		Total Bathrooms		Total Kitchens	
Number of new domestic water services		Number of new fire hydrants			Flow (gpm)		
Projected Residential Usage (gpd)		Number of fire protection systems			Flow (gpm)		
Number of irrigation systems		Required fire system residual pressure (psi)					
Projected Irrigation Demand (gpd)		Site Elevations (ft)		Datum Elevation (USGS)			
<b>Projected Residential based on 110 gpd / bedroom (310GMR15.023)</b>				<b>Projected Irrigation Use based on 1" per week x area (Apr - Sep)</b>			

<b>Part 3B - Water Demand Information - Non-Residential</b>				Total Square Footage			
Facility Use				Full Site and Building Plans Submitted			
Number of new domestic water services		Number of new fire hydrants			Flow (gpm)		
Projected Residential Usage (gpd)		Number of fire protection systems			Flow (gpm)		
Number of irrigation systems		Required fire system residual pressure (psi)					
Projected Irrigation Demand (gpd)		Site Elevations (ft)		Datum Elevation (USGS)			
<b>Projected Residential based on 110 gpd / bedroom (310GMR15.023)</b>				<b>Projected Irrigation Use based on 1" per week x area (Apr - Sep)</b>			

After reviewing and determining which case outlined on pages 3-4 of this document applies to your project, reviewing the details and completing the requirements of the option selected on pages 5-7, please indicate which Option below to finalize compliance with the program.

<b>Part 4 - Applicants to the Water Balance Program have options for means to comply and will review all then choose one below:</b>		
<b>Option 1: Applicant-Directed Conservation</b>  Applicant identifies, implements, and completes water conservation activities approved by WRWS, at existing WRWS customer facility/location(s).	<input type="checkbox"/>	Requirements / Checklist Applicant Directed Conservation  Details on Page
<b>Option 2: Water Balance Mitigation Fee</b>  Applicant provides a water balance mitigation fee that will be used by WRWS to fund water conservation activities within the applicable service area.	<input type="checkbox"/>	Requirments / Checklist Water Balance Mitigation Fee  Details on Page
<b>Option 3: Supplemental Water Supply Source for WRWS</b>  Must be developed and coordinated with WRWS on a case by case basis for: <ol style="list-style-type: none"> <li>1. Identification and development of a supplemental water supply source</li> <li>2. Development and payment for a supplemental water supply source</li> </ol>	<input type="checkbox"/>	The supplemental water source option is fully discussed with the WRWS through scheduled meetings and associated agreements

<b>Part 5 – Acknowledgement by the Applicant</b>			
Print Name		Title	
Signature		Date	

<b>Part 6 – Acknowledgement by Weir River Water System</b>			
Print Name		Title	
Signature		Date	

<b>Part 7 – Summary and Fee Associated with the WBP</b>					
Total Domestic Projection (gpd)		Total Irrigation Projection (gpd)		Total Project Projection (gpd)	
Mitigation Fee – projects less than 10,000 gpd		\$			
Mitigation Fee – projects greater than 10,000 gpd		\$			
Mandatory Conservation	Yes <input type="checkbox"/> No <input type="checkbox"/>	Amount of Mandatory Conservation Required (gpd)			

Please submit all information, including a set of site and building plans, to Russell E. Tierney, Managing Director / Superintendent, Weir River Water System, 25 Bare Cove Park Drive, Hingham, MA 02043 or email [tierneyr@hingham-ma.gov](mailto:tierneyr@hingham-ma.gov)

**CASE EXAMPLES FOR WBP COMPLIANCE****Case #1: New Construction**

Compliance with the Water Balance Program is required for all new buildings and/or structures which are not exempt as described above (temporary or permanent) where water service is proposed. The amount of water requested for service shall be proposed by the applicant and reviewed and approved by WRWS Water Company. If such amount exceeds the WBP Threshold the applicant shall comply with the Water Balance Program.

**Case #2: Existing Buildings (Renovations/Modifications)**

The renovation or modification of an existing building which results in a change in the usage of the building space will trigger an evaluation of water usage. If the same amount of building space will be used for the same activities (e.g. a 2,000 sf retail store being renovated into a new 2,000 sf retail store), then the determination will be that there is no change in water usage, provided that the building has been occupied and in use within the past 2 years. However, when the building renovations will result in a change in the current usage of building space (e.g. a 2,000 sf retail store being renovated into a 2,000 sf medical office; or a 4 bedroom house being converted into a fast food restaurant), then the change in water usage will be evaluated as follows:

Existing water usage for the building will be determined based on the average metered usage for the most recent two year period. If the proposed usage is greater than the existing metered usage then the net increase in water usage is the basis for determining whether compliance with the Water Balance Program is required. The net increase in usage will be determined by subtracting the existing metered usage (credit) from the future proposed usage. The metered usage credit will only be applicable if there has been activity/usage at the building within the past two years. For Example: a building on Main Street has an average 2-year metered water usage of 100 gpd. A dentist's office is planned for the building that will use 400 gpd. The net increase in usage is 400 gpd minus the 100 gpd credit, or 300 gpd.

**Case #3 Additions to Existing Buildings**

Additions to existing buildings are treated in a similar manner as new construction. The Water Balance Program is applicable to any proposed increase in the existing base usage that is greater than 274 gpd. Example: a 2-bedroom addition is proposed for an existing 3-bedroom house. The water balance program will be applicable to the net increase in water usage as a result of the 2-bedroom addition. Based on the tables found in 314 CMR 7.15 and 310 CMR 15.203, the net increase in usage is 220 gpd.

**Case #4: New Building Replacing Existing Building**

This situation is applicable to a site where there is an existing building with plans for it to be demolished and a new building constructed in its place. If the building space activities are the same for both the existing and future proposed buildings, and the size of the new building is equal to or less than the size of the existing building, then the Water Balance Program is not applicable. However, if the proposed building space activities differ from the existing building space activities, then the change in water usage will be evaluated based on the change in building size or usage. The Water Balance Program will only be applicable if there is a proposed net increase in water usage exceeding the WBP Threshold. The net increase in water usage will be determined as follows:

- Water usage for the existing building will be determined based on the average metered usage for the most recent two year period. If the proposed usage is greater than the existing metered usage then the Water Balance Program shall apply. The net increase in usage will be determined by subtracting the existing metered usage (credit) from the future proposed usage. The metered usage credit will only be applicable if there has been activity/usage at the building within the past two years. For Example: a building on Main Street has an average 2-year metered water usage of 300 gpd. Plans call for the building to be torn down and a new 5-bedroom residential home constructed in its place. The future proposed usage of a 5-bedroom home is 550 gpd. Therefore, the net increase in usage is 550 gpd (proposed) minus 300 gpd (existing credit) or 250 gpd.

**Case #5: New Occupancy of an Existing Vacant Building**

The Water Balance Program requirements for this situation are similar to Case 4. If the building space activities planned for the building are the same as those of the prior occupant, and the building has had water usage within the past two years, then the Water Balance Program is not applicable. However, if the building space activities are different in comparison to the prior occupant, or there has been no water usage within the past two years, then the change in water usage will be evaluated to determine the applicability of the Water Balance Program. The Water Balance Plan will only be applicable if there is a proposed net increase in water usage that exceeds the WBP Threshold. The net increase in water usage will be determined as follows:

- Buildings that have not been occupied within the past two years and/or have not had any water usage within the past two years will be treated as new construction as defined in Case 1. If however the building has been occupied within the past two years and has had water usage, then the existing water usage for the building will be determined based on the average metered usage for the most recent two year period. If the net increase in proposed usage for the building exceeds the WBP Threshold, then the applicant must comply with the Water Balance Program. The net increase in usage will be determined by subtracting the existing metered usage (credit) from the future proposed usage. The metered usage credit will only be applicable if there has been activity/usage at the building within the past two years (refer to prior case descriptions).

**Case #6: New Water Connection for an Existing Building**

If an existing building is currently not connected to the WRWS Water System, but requests to be connected, then the Water Balance Program will be applicable similar to Case 1, new construction

**Case #7: Businesses Relocating within the WRWS Service Area**

Businesses relocating to new or different buildings within the WRWS service area are subject to the Water Balance Program. Water usage credits shall remain with the original or existing building site prior to the move. Water usage credits do not migrate with the relocating customer, unless the existing place of business is demolished and a new one constructed in its place. The Water Balance Program will therefore be applicable as defined in the preceding six cases.

**Case #8: Temporary Water**

All temporary uses of water proposed to be used for a duration greater than one (1) month are subject to the Water Balance Program. The applicant shall provide a projection of the duration and daily use of water. This usage/volume will be converted to an average annual amount. The equivalent average annual amount will be subject to the Water Balance Program.

**OPTION 1 – DETAILS, CHECKLIST AND REQUIREMENTS - APPLICANT-DIRECT CONSERVATION**

With the Applicant-Directed Conservation option, the Applicant must provide WRWS with an estimate of the annual water usage or expanded water usage for the proposed project, and must develop and implement a Conservation Plan that will reduce the existing water usage within the WRWS equal to the proposed net increase in usage associated with the project. All gallons conserved will be applied to offset the proposed usage (or the proposed usage increase) up to a maximum requirement equal to the proposed usage (or the proposed usage increase). The proposed usage or the proposed usage increase amounts are hereinafter referred to as the “WBP Amounts”. Details are provided below.

 **Submit an estimate of project water usage (water demands)**

- Water use projections shall be completed for the proposed project which includes an estimate of average annual water usage (expressed in MGD - million gallons per day). All relevant, supporting data must be provided. Estimated usage must represent full project build-out. If the project is phased, then the incremental increases in water demand must be shown and explained
- Applicable Massachusetts Title 5 regulations (310 CMR 15.203) or Sewer Expansion regulations (314 CMR 7.15) shall be used to project and/or estimate average day water demands based on the proposed facility usage category(s).
- Within its reasonable discretion, WRWS may allow an alternative water demand projection methodology which uses actual water usage data from similar and comparable facilities (scope, size, location, etc.). Examples of required documentation include, but are not limited to: 2 years of current/actual water bills; plumbing manufacturers’ product information; facility occupancy records; federal/state agency plumbing guidelines. The Applicant shall describe the similarities and differences between the proposed facilities and the facilities generating the demand data. WRWS will make a determination on approving the methodology based on the information submitted.
- Upon request, WRWS will provide historical water consumption data for any pre- existing property associated with the proposed project.
- Irrigation demand must be estimated separately in each demand projection. Note that any new irrigation system will be required to use a rain or moisture sensor that is designed to interrupt the cycle of an automatic irrigation system when a specific amount of rainfall has occurred or when the moisture in the soil exceeds a specified limit.
- Water demand estimates shall be subject to the review and acceptance by WRWS.

**Submit a Water Conservation Plan**

- The WBP Amounts must be offset by an equal amount of water conservation savings. Developing and implementing the Water Conservation Plan is the responsibility of the Applicant. A proposed Plan shall be submitted with this Application. Methods to offset WBP Amounts include:
  - Implementing water demand reductions from existing water customers in the same service area as the new development. This can be done by retrofitting existing buildings with water saving plumbing fixtures and appliances. Estimated savings from retrofits can be derived from the information shown on Table 1. Higher water saving estimates may be considered with supporting documentation.
  - Implementation of demand reduction measures (e.g., independent irrigation systems, decreasing commercial and industrial consumptive use) associated with the results of water audits conducted for significant water users. (Large users will be identified by WRWS upon request.)
- All proposed water conservation work shall be reviewed and approved by WRWS. The water savings achieved by completing water conservation work shall be estimated using the information provided below in table 1 and the attached Water Conservation Credit Application form. Alternative conservation usage estimates may be proposed and are subject to the review and approval of WRWS. If plumbing fixtures are proposed to be replaced, then all fixtures of the same usage category (toilets, faucets, etc.) must be replaced in the premises in order to achieve the maximum calculated savings (100%).

<b>TABLE 1 – ESTIMATED WATER USAGE FOR PLUMBING DEVICES</b>	
<b>Device gallons per flush (gpf)</b>	<b>Projected Usage gallons per capita per day</b>
Vintage Toilet (pre-1978) – 5 to 7 gpf	25.0-35.0
Conventional 3.5 gpf Toilet (1978-1993)	17.5
Low Consumption 1.6 gpf Toilet (after 1993)	8.0
High Efficiency Toilet - 1.3 gpf	6.5
Dual Flush Toilet – 1.1 gpf	5.5
Conventional (3 gpm or more) Showerhead	13.0
Low Flow (2.5 gpm or less) Showerhead	11.0
Vintage Faucets (pre-1994) (3 gpm)	12.0
Standard Faucet (post-1993) (2.2 gpm)	11.0
Vintage Urinal (pre-1994) 3.5 gpf 3 flushes per capita per day	7.5
Standard Urinal (post-1993) (1.0 gpf) – 3 flushes per capita per day	3.0
Waterless Urinal	0.0

Sources:

1. American Water Works Association (AWWA) Manual M22 – Sizing Water Service Lines and Meters and AWWA Manual M52 Water Conservation Programs
2. Manufacturers Literature

**OPTION 2 – DETAILS, CHECKLIST AND REQUIREMENTS – WATER BALANCE MITIGATION FEE**

Under the Water Balance Mitigation Fee Option, the Applicant must provide WRWS with an estimate of the annual water usage or expanded water usage for the proposed project, and provide a Water Balance Mitigation Fee, calculated as described below. All Water Balance Mitigation Fees collected shall be used to fund conservation activities within the WRWS service area.

 **Submit an estimate of project water usage (water demands)**

- Water use projections shall be completed for the proposed project which includes an estimate of average annual water usage (expressed in MGD - million gallons per day). All relevant, supporting data must be provided. Projected usage must represent full project build-out and occupancy. If the project is phased, then the incremental increases in water demand must be shown and explained.
- Applicable Massachusetts Title 5 regulations (310 CMR 15.203) or Sewer Expansion regulations (314 CMR 7.15) shall be used to project and/or estimate average day water demands based on the proposed facility usage category(s).
- Irrigation demand must be estimated separately in each demand projection. Note that any new irrigation system will be required to use a rain or moisture sensor that is designed to interrupt the cycle of an automatic irrigation system when a specific amount of rainfall has occurred or when the moisture in the soil exceeds a specified limit.
- Water demand estimates shall be subject to the review and acceptance by WRWS.

 **Provide funding (Water Balance Mitigation Fee)**

- Once WRWS has reviewed and accepted the Applicant's estimated water demand projections, the owner/developer must provide to WRWS a Water Balance Mitigation Fee in the amount of \$10 per gallon per day (gpd) of 10,000 gpd or less of new or expanded usage, based on the proposed annual average water demand. WRWS will use the funds at its discretion to fund water conservation activities.
- **If a project's estimated average daily water demand is greater than 10,000 gpd, a Water Balance Mitigation Fee rate equal to the then actual unit costs (\$/gpd) for WRWS to complete water conservation work shall be used for all proposed usage. WRWS shall also have the discretion on a case-by-case basis to require the owner/developer to perform mandatory water conservation work in lieu paying the mitigation fee.**

**FINAL REVIEW AND ACKNOWLEDGEMENTS**

The Applicant acknowledges (by checking each box) that:

- This application must be complete in order for WRWS to complete its review. A complete application should include this form.
- The Applicant is responsible for all costs of the Water Balance Plan development and implementation. In order for WRWS to complete the review of the application, a preliminary deposit of \$1,000 is required to be submitted with this application. A receipt of the \$1,000 deposit will be provided. Depending on the size and complexity of the proposed project, additional application fees may be required for WRWS to complete the application review on a case by case basis. Any such additional application fees will be billed to the Applicant and final review will be subject to payment. Any unused funds will be returned to the Applicant.
- The Applicant acknowledges that the requirement for a Water Balance Plan is based upon current water withdrawal limits regulated by the DEP. A Water Balance Plan may or may not be required in the future. WRWS reserves the right to alter the requirements, mitigation fees, or discontinue this program at any time.
- For the Applicant-Directed Water Conservation Option, water service will not be rendered to the Applicant's project until the activities described by the Applicant's Water Conservation Plan, as approved by WRWS, have been completed by the Applicant. A written acknowledgement that the Applicant has complied will be provided. Projects involving expansion of existing water demand requiring either construction or change in use must comply with the plan in order to maintain water service delivery.
- For the Water Balance Mitigation Fee Option, water service will not be provided to the Applicant's project until the Applicant has provided WRWS with the required funds.
- The applicant acknowledges WRWS or its designee will routinely review the project's water use. In the event the actual usage exceeds the estimated usage the applicant shall immediately submit another Water Balance Program application under the existing terms and conditions of the program and take steps as required by the Water Balance Program to offset the additional usage. .