

BATT: BMP Accounting & Tracking Tool

Overview of BMP tracking, BMP credits, and Reporting Options



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Project Background

- Small MS4 General Permit for MA and NH
 - Phosphorus reduction requirement to meet the Waste Load Allocations for the impaired watershed
- Phosphorus Control Plan (PCP)
 - To measure compliance with its phosphorus reduction requirement under the permit
- BATT
 - A tool to facilitate storm water engineers to evaluate and track progress on Nutrient Management Practices described in PCP

BATT: An Overview

- A spreadsheet-based tool that facilitates watershed based nutrient accounting, tracking and reporting associated with nutrient load reduction requirements in the Massachusetts and New Hampshire MS4 permit
- Customized for EPA Region 1
- The tool provides three primary functions:
 - Accounting & Tracking of BMP Implementation
 - Accounting & Tracking Changes in Land Uses
 - Reporting

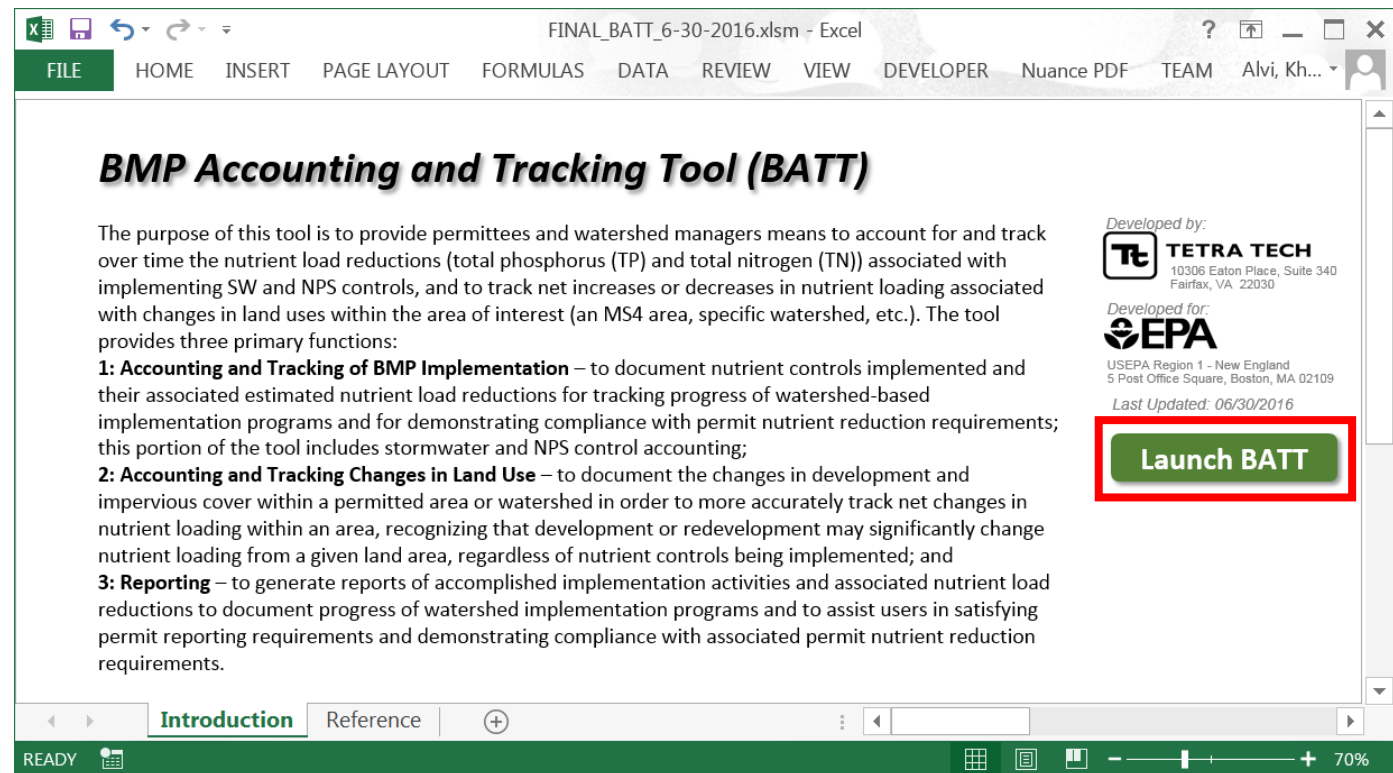
BATT: Software Requirements

- Microsoft Excel 2013
- Microsoft Word 2013
- Security settings should be changed to 'enable macros'
 - Click the File Button and go to *Options*. On the left-hand menu select *Trust Center* and click the button for *Trust Center Settings*. On the left-hand menu select *Macro Settings*. Select the *Enable All Macros* option.
- Activate 'MS Work 15.0 Object Library'
 - Activate the Visual Basic Editor window (*Alt F11*). Select the current project in the Project Explorer window, and choose *Tools | References*. In the References dialog box, choose the *MS Word 15.0 Object Library* in the Available References list box. Scroll down in the Available References list box to locate this object library and click the check box next to this object library. Click *OK* to close the Reference dialog box.

BATT: Interface

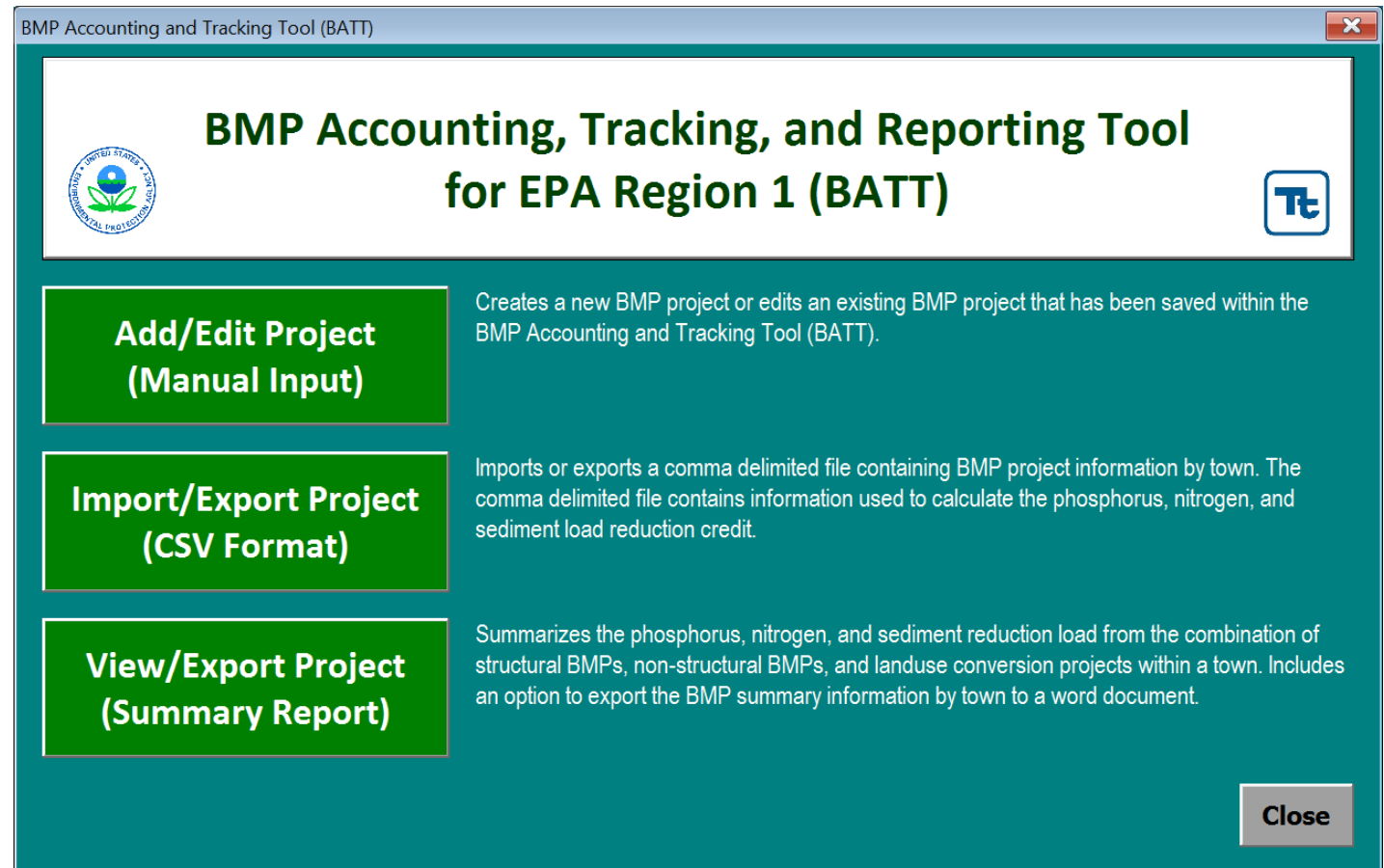
- BATT is launched from the 'Launch BATT' button on the *Introduction* Screen

Caution: Once any form is opened in BATT, Microsoft Excel will be locked. However, Microsoft Word is still accessible. In order to access data while BATT is open, move data to a word document.



BATT: Home Screen

- The *Home* form offers three options:
 - Add/Edit Project (Manual Input)
 - Import/Export Project (CSV Format)
 - View/Export Project (Summary Report)



BATT: Add/Edit Project

- The user is **required** to select a state and town before proceeding
- *Edit* option launches a project form containing the existing BMP project and land use information
- *Delete* option removes the selected project from the project database
- *Update Existing Project List* updated the structural, non-structural, and land use conversion project list after a project is edited, deleted or added
- *Add BMP (Structural)*, *Add BMP (Non-Structural)*, and *Add Land Use Conversion* launches a project form depending on the project type

The screenshot shows a web application window titled "Add/Edit Project". At the top, there are two dropdown menus: "Select a State" with "MASSACHUSETTS" selected, and "Select a Town" with "ARLINGTON" selected. To the right of the town dropdown is a green "Add Town" button. Below these is a section titled "Existing Project" which contains three rows of dropdown menus and buttons. The first row is "Select a Structural BMP Project" with "INFIL101" selected, followed by green "Edit" and orange "Delete" buttons. The second row is "Select a Non-Structural BMP Project" with "SWEEP101" selected, followed by green "Edit" and orange "Delete" buttons. The third row is "Select a Land Use Conversion Project" with "LUCONV101" selected, followed by green "Edit" and orange "Delete" buttons. Below these rows is a green "Update Existing Project List" button. At the bottom of the window is a section titled "New Project" which contains three large green buttons: "Add BMP (Structural)", "Add BMP (Non-Structural)", and "Add Land Use Conversion". In the bottom right corner of the window is a grey "Close" button.

BATT: Add New BMP Project

- *Add BMP (Structural/Non-Structural)* option launches a project form asking the new BMP project and land use information
- If a subcatchment ID or receiving water is saved via the *Add Subcatchment* form or *Add Receiving Water* form, then the added option will become available in corresponding option boxes

Add Structural BMP

Land Use Information | BMP Information

Subcatchment ID:

Receiving Water:

Project Type

New Development* Retrofit BMP

Permit

Multi Sector General Permit

Select Land Area Treated by the BMP

Land Use Type:

Land Use Area (acre):

Hydrologic Soil Group:

BMP Drainage Area *

HIGH DENSITY RESIDENTIAL (I), 5, N/A

* BMP Drainage Area Note
The format of land use information stored in BMP drainage area:
Land Use Type, Area, HSG, Phosphorus Land Loading Rate,
Phosphorus Adjustment Factor, Nitrogen Land Loading Rate,
Nitrogen Adjustment Factor, Sediment Land Loading Rate, Sediment
Adjustment Factor.

BATT: Add New BMP Project – cont.

- The selection of land use type is limited to the number of land use type available in the Opti-Tool
- The letter at the end of the land use type denotes if the land use is impervious (I) or pervious (P)
- Hydrologic Soil Group (HSG) Options: A, B, C, C/D, D
- To add land use information, the user must select the land use type and the hydrologic soil group for pervious land, and provide the land use area

Land Use List
AGRICULTURE (I)
AGRICULTURE (P)
COMMERCIAL (I)
COMMERCIAL (P)
FOREST (I)
FOREST (P)
HIGH DENSITY RESIDENTIAL (I)
HIGH DENSITY RESIDENTIAL (P)
HIGHWAY (I)
HIGHWAY (P)
INDUSTRIAL (I)
INDUSTRIAL (P)
LOW DENSITY RESIDENTIAL (I)
LOW DENSITY RESIDENTIAL (P)
MEDIUM DENSITY RESIDENTIAL (I)
MEDIUM DENSITY RESIDENTIAL (P)
OPEN LAND (I)
OPEN LAND (P)

BATT: Add New BMP Project – cont.

- The *Edit Land Loading Rates* form provides the land loading rates, and the user has the option to change the adjustment factor and save the changes
- The *Add* button assumes an adjustment factor of 1, unless the user edited the adjustment factor in *the Edit land Loading Rates* form, and then moves the land use information into the *BMP Drainage Area* box
- The *BMP Drainage Area Note* explains the format of the land use information in the *BMP Drainage Area* box

The screenshot shows a software window titled "Edit Loading Rates" with a close button in the top right corner. The window contains three sections for loading rates, each with a "Calculated (lb/ac/yr)" field and an "Adjustment Factor (multiplier)" field. The "Land Area Loading" section is expanded, showing Phosphorus Loading with a calculated value of 2.32 and an adjustment factor of 1. The Nitrogen Loading section shows a calculated value of 14.1 and an adjustment factor of 1. The Total Suspended Solids Loading section shows a calculated value of 438.95 and an adjustment factor of 1. At the bottom right of the window are "Save" and "Close" buttons.

Category	Calculated (lb/ac/yr)	Adjustment Factor (multiplier)
Phosphorus Loading	2.32	1
Nitrogen Loading	14.1	1
Total Suspended Solids Loading	438.95	1

BATT: Structural BMP Information

- Required Information
 - Unique Project ID
 - BMP Type
 - Associated BMP Specifications
 - Storage Volume (ft³)
 - Infiltration Rate (in/hr)

Infiltration Rate (in/hr)
0.17
0.27
0.52
1.02
2.41
8.27

Structural BMPs List

BIORETENTION

ENHANCED BIORETENTION

EXTENDED DRY DETENTION POND

GRASS SWALE (CONVEYANCE)

GRAVEL WETLAND

INFILTRATION BASIN

INFILTRATION TRENCH

POROUS PAVEMENT

WET POND/CREATED WETLAND

BATT: Non-Structural BMP Information

- Required Information
 - Unique Project ID
 - BMP Type
 - Associated BMP Specifications
 - Storage Volume (ft³)
 - Release Rate for Impervious Area Disconnection Through Storage BMP (1, 2, or 3 days)
 - Enhanced Sweeping Program
 - Sweeper Technology
 - Sweeper Frequency

Sweeper Technology Choices
HIGH-EFFICIENCY REGENERATIVE AIR-VACUUM
MECHANICAL BROOM
VACUUM ASSISTED

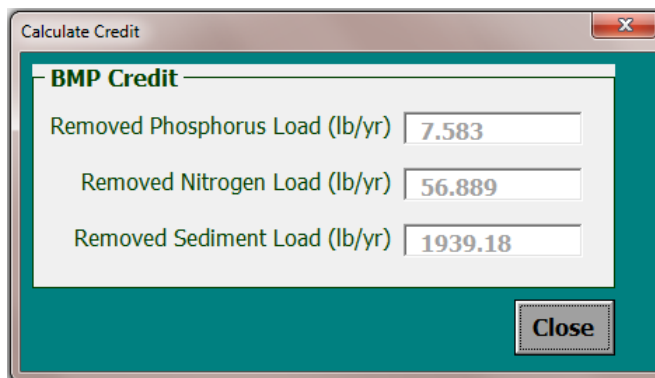
Sweeper Frequency Choices
MONTHLY
TWICE/YEAR (SPRING AND FALL)
WEEKLY

Non-Structural BMPs List
CATCH BASIN CLEANING
ENHANCED SWEEPING PROGRAM
IMPERVIOUS AREA DISCONNECTION
IMPERVIOUS AREA DISCONNECTION THROUGH STORAGE
NO APPLICATION OF FERTILIZERS CONTAINING PHOSPHORUS
ORGANIC WASTE/LEAF LITTER COLLECTION PROGRAM



BATT: Add New BMP Project – cont.

- The *Refresh* button re-calculates the default BMP efficiencies, if the user changed the BMP type or BMP specifications
- The Calculate Credit button calculates the change in load from the implemented BMP or from the land use conversion



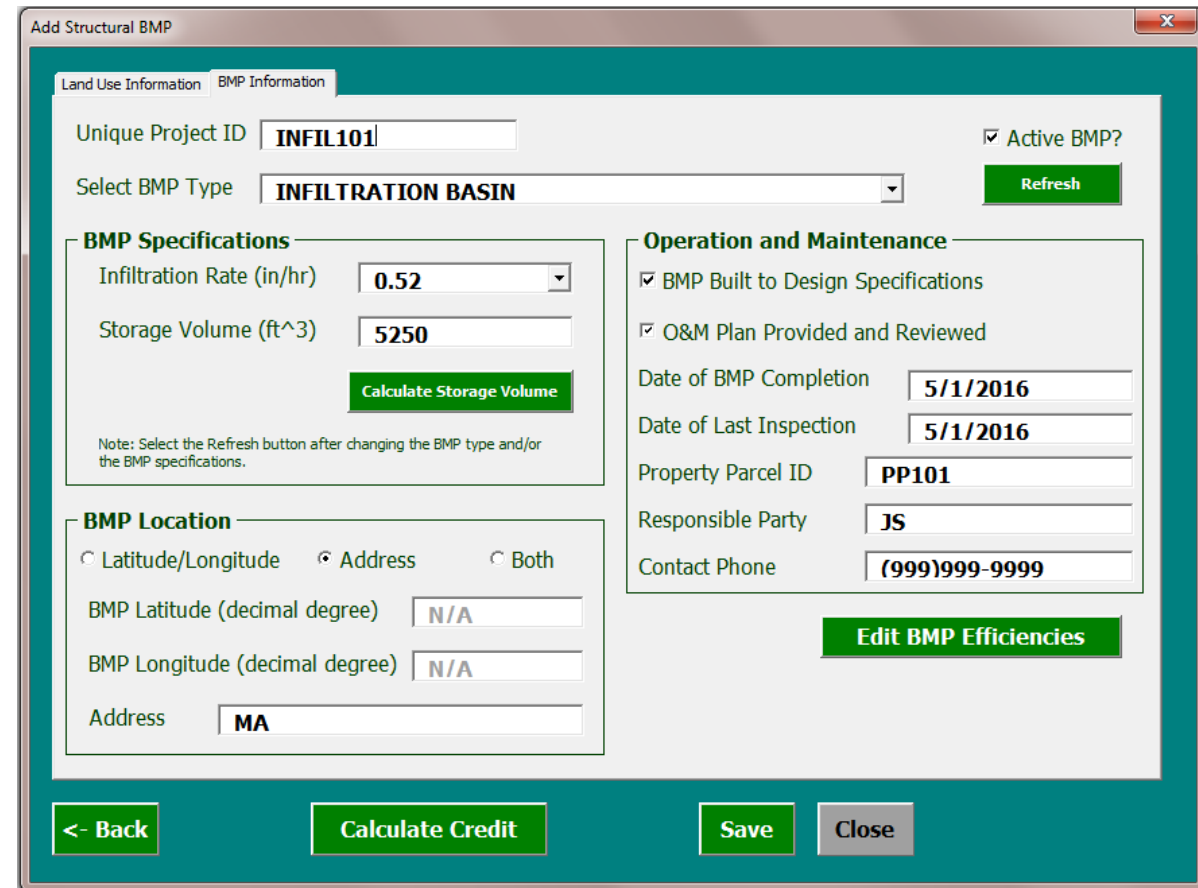
Calculate Credit

BMP Credit

Removed Phosphorus Load (lb/yr)

Removed Nitrogen Load (lb/yr)

Removed Sediment Load (lb/yr)



Add Structural BMP

Land Use Information | BMP Information

Unique Project ID Active BMP?

Select BMP Type

BMP Specifications

Infiltration Rate (in/hr)

Storage Volume (ft³)

Note: Select the Refresh button after changing the BMP type and/or the BMP specifications.

BMP Location

Latitude/Longitude Address Both

BMP Latitude (decimal degree)

BMP Longitude (decimal degree)

Address

Operation and Maintenance

BMP Built to Design Specifications

O&M Plan Provided and Reviewed

Date of BMP Completion

Date of Last Inspection

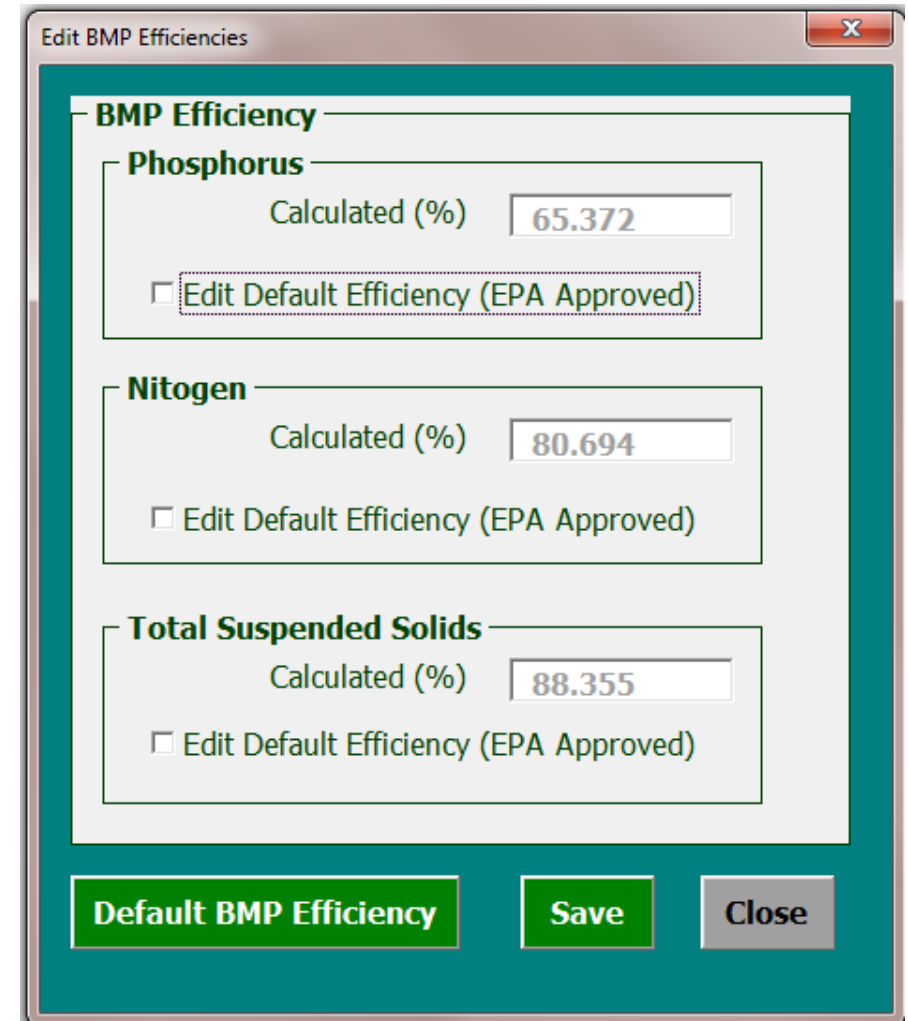
Property Parcel ID

Responsible Party

Contact Phone

BATT: Add New BMP Project – cont.

- The Edit BMP Efficiencies calculates the selected BMP efficiency for phosphorus, nitrogen, and total suspended solids
- The Edit Default Efficiency (EPA Approved) option box provides the option to edit the calculated efficiencies, with EPA approval
- The Default BMP Efficiency button re-calculates the default BMP efficiencies and populates the form with default BMP efficiencies



Edit BMP Efficiencies

BMP Efficiency

Phosphorus

Calculated (%)

Edit Default Efficiency (EPA Approved)

Nitrogen

Calculated (%)

Edit Default Efficiency (EPA Approved)

Total Suspended Solids

Calculated (%)

Edit Default Efficiency (EPA Approved)

Default BMP Efficiency **Save** **Close**

BATT: Add New Land Use Conversion Project

- Required Information
 - Land Use Before
 - Land Use After
- The total land use area before conversion **must** be equal to the total land use area after conversion
- The new developed areas may generate more loads and result in negative credits

Add Land Use Conversion

Land Use Before Land Use After

Date of Conversion Completion Property Parcel ID

Responsible Party Contact Phone

Select Land Area After Conversion

Land Use Type

Land Use Area (acre)

Hydrologic Soil Group

Note: Land use types are followed by letter to represent pervious or impervious. P denotes pervious land use, and I denotes impervious land use.

Total Land Area *

HIGH DENSITY RESIDENTIAL (I),5,N/A,2.32,1,

* Total Land Area Note
The format of land use information stored in BMP drainage area: Land Use Type, Area, HSG, Phosphorus Land Loading Rate, Phosphorus Adjustment Factor, Nitrogen Land Loading Rate, Nitrogen Adjustment Factor, Sediment Land Loading Rate, Sediment Adjustment Factor.

BATT: Import/Export Project (CSV Format)

- The import/export project function provides the option to browse for a comma separated values (CSV) file and then either import or export a project at the state and town level
- The total number and order of fields are fixed and BATT requires all the fields to be populated in the CSV file

Import/Export Project

Select a State **MASSACHUSETTS**

Select a Town **ARLINGTON**

Import Project

Select Structural Project File Path (CSV) **C:\Projects\Structural.csv** Browse Import

Select Non-Structural Project File Path (CSV) **C:\Projects\NonStructural.csv** Browse Import

Select LU Conversion Project File Path (CSV) **C:\Projects\Land Use Conversion.csv** Browse Import

Export Project

Enter Structural Project File Path (CSV) **C:\Projects\Structural.csv** Browse Export

Enter Non-Structural Project File Path (CSV) **C:\Projects\NonStructural.csv** Browse Export

Enter LU Conversion Project File Path (CSV) **C:\Projects\Land Use Conversion.csv** Browse Export

Close

BATT: Import/Export Project – Cont.

- The number of fields after the *Number of Land Uses* field should be repeated based on the value of *Number of Land Uses*
- If a field is not relevant to the project type it must not be skipped but rather use a flag value
 - N/A for text field
 - -999 for a number field
- Upon importing, BATT calculates the land loading rates
- Once a project is imported, a project can be edited through the *Add/Edit Project* feature or the nutrient load reduction can be summarized through the *View/Export Project (Summary Report)*

BATT: Import/Export Project – Rules

- If Calculated BMP Efficiency is -999 or Edit Default Efficiency is N/A, then upon import, the tool will calculate the default BMP efficiencies based on BMP specifications and land uses
- If the Storage Volume (ft³)/ Filter Depth (in.) is -999, then BATT assumes a value of 0
- If the Receiving Pervious Area is -999, then the tool assumes an area of 0
- If BMP storage volume or BMP treated land use area is zero, there will be no load credit for such BMPs
- If Land Use Area is -999, then BATT will assume an area of 0
- If Adjustment Factor is -999, then BATT will assume an adjustment factor of 1

BATT: View/Export Project (Summary Report)

- The view/export project report function lists the unique identification of BMP and land use conversion projects
- Summarizes phosphorus, nitrogen, and sediment total load reduction
- The project report includes the State and Town level project summary credit and individual project summary
- The Export Project Report exports the project summary to a word document

BMP Projects

Select a State: **MASSACHUSETTS**

Select a Town: **ARLINGTON**

Structural BMPs: **INFIL101**

Non-Structural BMPs: **SWEEP101**

Land Use Conversion: **LUCONV101**

	Structural	Non-Structural	LU Conversion	Total
Removed Phosphorus Load (lb/yr)	7.58	0.71	-11	-2.7
Removed Nitrogen Load (lb/yr)	56.89	0	-64.7	-7.81
Removed Sediment Load (lb/yr)	1939.18	0	-2047.55	-108.37

Export Project

Enter Project Report Path (Word Document): **C:\Projects\Project Summary Report.docx**

BATT: View/Export Project – Cont.

Table 1. Project Summary Credit for ARLINGTON

	Removed Phosphorus Load (lb/yr)	Removed Nitrogen Load (lb/yr)	Removed Sediment Load (lb/yr)
Structural	7.58	56.89	1939.18
Non-Structural	0.71	0	0
Land Use Conversion	-11	-64.7	-2047.55
Total	-2.7	-7.81	-108.37

Table 2. Structural Project Summary for ARLINGTON

Project ID	BMP Type	BMP Storage Capacity (ft ³)/ Filter Depth (in.)	Phosphorus BMP Efficiency (%)	Nitrogen BMP Efficiency (%)	Sediment BMP Efficiency (%)	Removed Phosphorus Load (lb/yr)	Removed Nitrogen Load (lb/yr)	Removed Sediment Load (lb/yr)	Impervious Area Treated (acres)	Runoff Depth (in.)
INFIL101	INFILTRATION BASIN	5250	65.37	80.69	88.36	7.58	56.89	1939.18	5	0.29

Table 3. Non-Structural Project Summary for ARLINGTON

Project ID	BMP Type	BMP Storage Capacity	Phosphorus BMP Efficiency (%)	Nitrogen BMP Efficiency (%)	Sediment BMP Efficiency (%)	Removed Phosphorus Load (lb/yr)	Removed Nitrogen Load (lb/yr)	Removed Sediment Load (lb/yr)	Impervious Area Treated (acre)	Runoff Depth (in.)
SWEEP101	ENHANCED SWEEPING PROGRAM	N/A	8	0	0	0.71	0	0	5	N/A

Table 4. Land Use Conversion Project Summary for ARLINGTON

Project ID	Removed Phosphorus Load (lb/yr)	Removed Nitrogen Load (lb/yr)	Removed Sediment Load (lb/yr)	Impervious Area Treated (acre)
LUCCHANGE101	-11	-64.7	-2047.55	5



BATT: Example Structural BMP Import/Export (CSV Format)

**The value should match with the options available in BATT.*

***BATT required input (import CSV file).*

****BATT calculated output (export CSV file).*

Field Name
State ^{*,**}
Town ^{*,**}
Unique Project ID ^{**}
Selected BMP Type ^{*,**}
Active BMP (Yes/No) ^{*,**}
Project Type (New Development/Retrofit) ^{*,**}
Multi Sector General Permit (Yes/No) ^{*,**}
Phosphorus: Calculated BMP Efficiency (%) ^{***}
Phosphorus: Edit Default Efficiency (Yes/No) ^{*,**}
Nitrogen: Calculated BMP Efficiency (%) ^{***}
Nitrogen: Edit Default Efficiency (Yes/No) ^{*,**}
Total Suspended Solids: Calculated BMP Efficiency (%) ^{***}
Total Suspended Solids: Edit Default Efficiency (Yes/No) ^{*,**}
Phosphorus Load Reduction (lb/yr) ^{***}
Nitrogen Load Reduction (lb/yr) ^{***}
Total Suspended Solids Load Reduction (lb/yr) ^{***}
Date of BMP Completion ^{**}
Date of Last Inspection ^{**}
Subcatchment ID ^{**}
Receiving Water ^{**}
Infiltration Rate (in/hr) ^{*,**}
Storage Volume (ft ³) / Filter Depth (in.) ^{**}
BMP latitude (degree) ^{**}
BMP Longitude (degree) ^{**}
Address ^{**}
BMP Built to Design Specification (Yes/No) ^{*,**}
O&M Plan Provided and Reviewed (Yes/No) ^{*,**}
Property Parcel ID ^{**}
Responsible Party ^{**}
Contact Phone ^{**}
Number of Land Uses ^{**}
Land Use Type1 ^{*,**}
Land Use Area (ac) 1 ^{**}
Hydrologic Soil Group1 ^{*,**}
TP Calculated Land Area Loading (lb/ac/yr)1 ^{***}
TP Adjustment Factor1 ^{**,***}
TN Calculated Land Area Loading (lb/ac/yr)1 ^{***}
TN Adjustment Factor1 ^{**,***}
TSS Phosphorus Calculated Land Area Loading (lb/ac/yr)1 ^{***}
TSS Adjustment Factor1 ^{**,***}



BATT: Example Structural BMP Import

State	Town	Unique Project ID	Selected BMP Type	Active BMP (Yes/No)	Project Type	Multi Sector General Permit	Phosphorus: Calculated BMP Efficiency (%)	Phosphorus: Edit Default Efficiency (EPA Approved)	Nitrogen: Calculated BMP Efficiency (%)	Nitrogen: Edit Default Efficiency (EPA Approved)	Total Suspended Solids: Calculated BMP Efficiency (%)	Total Suspended Solids: Edit Default Efficiency (EPA Approved)	Phosphorus Load Reduction (lb/yr)	Nitrogen Load Reduction (lb/yr)	Total Suspended Solids Load Reduction (lb/yr)
MASSACHUSETTS	ARLINGTON	B101	BIORETENTION	-999	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	EB101	ENHANCED BIORETENTION	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	DRY101	EXTENDED DRY DETENTION POND	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	GS101	GRASS SWALE (CONVEYANCE)	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	GW101	GRAVEL WETLAND	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	IT101	INFILTRATION TRENCH	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	PP101	POROUS PAVEMENT	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	SI101	SURFACE INFILTRATION	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	WP101	WET POND/CREATED WETLAND	Yes	New Development	No	-999	-999	-999	-999	-999	-999	-999	-999	-999



BATT: Example Structural BMP Import – Cont.

Date of BMP Completion	Date of Last Inspection	Subcatchment	Receiving Water ID	Infiltration Rate (in/hr)	Storage Volume (ft^3)/ Filter Depth (in.)	BMP latitude (degree)	BMP Longitude (degree)	Address	BMP Built to Design Specification (Yes/No)	O&M Plan Provided and Reviewed (Yes/No)	Property Parcel ID	Responsible Party	Contact Phone
1/1/2016	1/1/2016	SWS101	RCH101	N/A	5250	N/A	N/A	1263	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	SWS101	RCH101	N/A	7570	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	N/A	65000	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	N/A	54000	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	N/A	15000	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	2.41	98765	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	N/A	0	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	0.17	567980	N/A	N/A	123	No	No	N/A	N/A	N/A
1/1/2016	1/1/2016	N/A	N/A	N/A	30000	N/A	N/A	123	No	No	N/A	N/A	N/A



BATT: Example Structural BMP Import – Cont.

Number of Land Uses	Land Use Type 1	Land Use Area (ac) 1	Hydrologic Soil Group 1	TP Calculated Land Area Loading (lb/ac/yr) 1	TP Adjustment Factor 1	TN Calculated Land Area Loading (lb/ac/yr) 1	TN Adjustment Factor 1	TSS Phosporus Calculated Land Area Loading (lb/ac/yr) 1	TSS Adjustment Factor 1
1	OPEN LAND (I)	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	OPEN LAND (I)	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	OPEN LAND (I)	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	OPEN LAND (I)	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	OPEN LAND (I)	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-999	OPEN LAND (I)	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A

BATT: Example Non-Structural BMP Import/Export (CSV Format)

**The value should match with the options available in BATT.*

***BATT required input (import CSV file).*

****BATT calculated output (export CSV file).*

Field Name
State ^{*,**}
Town ^{*,**}
Unique Project ID ^{**}
BMP Type ^{*,**}
Active (Yes/No) ^{*,**}
TP Efficiency ^{***}
Edit Default TP Efficiency (Yes/No) ^{*,**}
TN Efficiency ^{***}
Edit Default TN Efficiency (Yes/No) ^{*,**}
TSS Efficiency ^{***}
Edit Default TSS Efficiency (Yes/No) ^{*,**}
Phosphorus Reduction Load ^{***}
Nitrogen Reduction Load ^{***}
Total Suspended Sediment Reduction Load ^{***}
Date of BMP Completion ^{**}
Subcatchment ^{**}
Receiving Water ID ^{**}
Storage Volume ^{**}
Receiving Pervious Area ^{**}
Release Rates ^{*,**}
Pervious Area HSG ^{*,**}
Sweeper Technology ^{*,**}
Sweeper Frequency ^{*,**}
Responsible Party ^{**}
Contact Phone Number ^{**}
Number of Land Uses ^{**}
Land Use Type 1 ^{*,**}
Land Use Area (ac) 1 ^{**}
Hydrologic Soil Group 1 ^{*,**}
TP Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TP Adjustment Factor 1 ^{**,***}
TN Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TN Adjustment Factor 1 ^{**,***}
TSS Phosphorus Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TSS Adjustment Factor 1 ^{**,***}



BATT: Example Non-Structural BMP Import

State	Town	Unique Project ID	BMP Type	Active	Phosphorus: Calculated BMP Efficiency (%)	Phosphorus: Edit Default Efficiency (EPA Approved)	Nitrogen: Calculated BMP Efficiency (%)	Nitrogen: Edit Default Efficiency (EPA Approved)	Total Suspended Solids: Calculated BMP Efficiency (%)	Total Suspended Solids: Edit Default Efficiency (EPA Approved)	Phosphorus Reduction Load (lb/yr)	Nitrogen Reduction Load (lb/yr)	Total Suspended Sediment Reduction Load (lb/yr)
MASSACHUSETTS	ARLINGTON	CBC101	CATCH BASIN CLEANING	No	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	IADISCONN101	IMPERVIOUS AREA DISCONNECTION	Yes	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	IADISCONNS101	IMPERVIOUS AREA DISCONNECTION THROUGH STORAGE	Yes	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	NoFert	NO APPLICATION OF FERTILIZERS CONTAINING PHOSPHORUS	Yes	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	LL101	ORGANIC WASTE/LEAF LITTER COLLECTION PROGRAM	Yes	-999	-999	-999	-999	-999	-999	-999	-999	-999
MASSACHUSETTS	ARLINGTON	ESP101	ENHANCED SWEEPING PROGRAM	Yes	-999	-999	-999	-999	-999	-999	-999	-999	-999



BATT: Example Non-Structural BMP Import – Cont.

Date of BMP Completion	Subcatchment ID	Receiving Water ID	Storage Volume (ft ³)/ Filter Depth (in.)	Receiving Pervious Area (ac)	Release Rates (days)	Pervious Area HSG	Sweeper Technology	Sweeper Frequency	Responsible Party	Contact Phone Number
12/31/2-15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/31/2-15	N/A	N/A	N/A	4300000	N/A	B	N/A	N/A	N/A	N/A
12/31/2-15	N/A	N/A	65000	4500000	1	B	N/A	N/A	N/A	N/A
12/31/2-15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/31/2-15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/31/2-15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TWICE/YEAR (SPRING AND FALL)	N/A	N/A



BATT: Example Land Use Conversion Import/Export (CSV Format)

**The value should match with the options available in BATT.*

***BATT required input (import CSV file).*

****BATT calculated output (export CSV file).*

Field Name
State ^{*,**}
Town ^{*,**}
Unique Project ID ^{**}
Phosphorus Load Reduction (lb/yr) ^{***}
Nitrogen Load Reduction (lb/yr) ^{***}
Total Suspended Solids Load Reduction (lb/yr) ^{***}
Date of Conversion Completed ^{**}
Subcatchment ID ^{**}
Receiving Water ID ^{**}
Property Parcel ID ^{**}
Responsible Party ^{**}
Contact Phone ^{**}
Number of Land Uses After ^{**}
Number of Land Uses Before ^{**}
Land Use Type 1 ^{*,**}
Land Use Area (ac) 1 ^{**}
Hydrologic Soil Group 1 ^{*,**}
TP Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TN Adjustment Factor 1 ^{**,***}
TN Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TN Adjustment Factor 1 ^{**,***}
TSS Phosphorus Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TSS Adjustment Factor 1 ^{**,***}
Land Use Type 1 ^{*,**}
Land Use Area (ac) 1 ^{**}
Hydrologic Soil Group 1 ^{*,**}
TP Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TN Adjustment Factor 1 ^{**,***}
TN Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TN Adjustment Factor 1 ^{**,***}
TSS Phosphorus Calculated Land Area Loading (lb/ac/yr) 1 ^{***}
TSS Adjustment Factor 1 ^{**,***}

BATT: Example Land Use Conversion Import

State	Town	Unique Project ID	Phosphorus Load Reduction (lb/yr)	Nitrogen Load Reduction (lb/yr)	Total Suspended Solids Load Reduction (lb/yr)	Date of Conversion Completed	Subcatchment ID	Receiving Water	Property Parcel ID	Responsible Party	Contact Phone	Number of Land Uses After	Number of Land Uses Before
MASSACHUSETTS	ARLINGTON	LUC101	N/A	N/A	N/A	12/31/2015	N/A	N/A	N/A	N/A	N/A	1	1



BATT: Summary

- Accessible to all users with Microsoft Excel 2013 software
- BMP performance curves for estimating long-term cumulative nutrient and sediment load reduction for structural stormwater controls
- Literature information and other EPA studies for estimating nutrient and sediment load reduction efficiencies for non-structural stormwater controls
- Results are consistent with loading rates and BMP performance documented in the EPA Region 1 MS4 permits
- Report shows progress towards the implementation of PCP, developed for compliance with the MA and NH permits



Feedback and Other Presentations

- Questions or comments?
 - Suzanne Warner (Warner.Suzanne@epa.gov)
- Links to other presentations
 - <https://www.epa.gov/npdes/npdes-stormwater-webcasts>

