



# Green Stormwater Infrastructure Database

Draft Technical Guidance Document V1.0 – May 2019



Campbell • Cupertino • Los Altos • Los Altos Hills • Los Gatos • Milpitas • Monte Sereno • Mountain View • Palo Alto  
San Jose • Santa Clara • Saratoga • Sunnyvale • Santa Clara County • Santa Clara Valley Water District

# Green Stormwater Infrastructure Database

## **Draft Technical Guidance Document**

**V1.0**

Developed for the  
Santa Clara Valley Urban Runoff  
Pollution Prevention Program

Developed by EOA, Inc.



## Table of Contents

List of Abbreviations .....	ii
1. Background .....	1
2. Database/ Web Application Structure .....	1
3. Login/User Permissions.....	3
4. Viewing Project Data.....	7
4.1. Project Overview Map .....	7
4.2. Project Overview Table .....	8
4.3. Project Details.....	9
Drainage Management Area (DMA) Summary Table .....	11
Project Documents Table.....	11
Project Photos Table and Gallery.....	12
Google Street View .....	14
5. Data Entry and Editing .....	14
5.1. Add/Edit/Delete Project Data from Browse Projects Page.....	15
Add Project.....	15
Edit Project.....	17
Delete Projects.....	18
Batch Upload.....	19
5.2. Project Document and Photo Upload.....	20
6. Data Download/Export .....	22
Appendix A - Glossary .....	23
i. Terminology and Field Definitions of Permittee Inputs.....	23
A. Project Table Field Inputs .....	23
B. Drainage Management Area (DMA) Summary Table Inputs .....	25

## List of Abbreviations

<b>Bay</b>	San Francisco Bay
<b>BASMAA</b>	Bay Area Stormwater Management Agencies Association
<b>BSM</b>	Biotreatment Soil Mix
<b>DMA</b>	Drainage Management Area
<b>FY</b>	Fiscal Year
<b>GIS</b>	Geographic Information System
<b>GSI</b>	Green Stormwater Infrastructure
<b>LID</b>	Low Impact Development
<b>MRP</b>	Municipal Regional Permit
<b>PCBs</b>	Polychlorinated Biphenyls
<b>POC</b>	Pollutant of Concern
<b>RAA</b>	Reasonable Assurance Analysis
<b>RMP</b>	Regional Monitoring Program
<b>ROW</b>	Right-Of-Way
<b>SCVURPPP</b>	Santa Clara Valley Urban Runoff Pollution Prevention Program
<b>SWRP</b>	Stormwater Resource Plan
<b>TMDL</b>	Total Maximum Daily Load
<b>WY</b>	Water Year
<b>WMA</b>	Watershed Management Area

## 1. Background

This document is intended to provide guidance for using the Green Stormwater Infrastructure (GSI) online database which has been created by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) to meet the requirements of the Municipal Regional Stormwater NPDES Permit (MRP)<sup>1</sup>.

The GSI database web application assists Permittees with current and future GSI data tracking, management and reporting needs and supports the ongoing development of Stormwater Resource Plans (SWRP) and a Reasonable Assurance Analysis (RAA). The goal of the centralized web-based system is to offer easier accessibility to the data by Permittee and Program staff to add, edit, and download GSI project data. Additional goals are to improve efficiency of tracking and mapping completed GSI projects (public and private), provide consistency in how Permittees are tracking and reporting projects, and provide enhanced abilities for Permittees to calculate water quality benefits. Furthermore, ensuring GSI project data is accessible by the public fulfills Provision C.7's Public Information & Outreach requirements in the MRP.

This GSI data management system has several major advantages over the previous tracking methods. Previously, each Permittee internally tracked GSI projects within their jurisdiction, often with a spreadsheet and with little consistency between Permittees. In 2016, as part of the Interim Accounting Methodology required under MRP 2.0, Program staff requested and collected data on all GSI projects in the county into a single spreadsheet-based system consistent throughout the MRP area to track all GSI projects and make preliminary estimations of water quality benefits of GSI Projects on PCBs and mercury (Pollutants of Concern, or POCs). The new GSI database web application builds on those efforts and creates a single, centralized, web-based system that can be accessed by both Permittees and Program staff to improve the efficiency of tracking and mapping completed GSI projects, streamline data entry, and ensure consistency among Permittees. Eventual public access to this information in a user-friendly interface will raise awareness of the environmental benefits of these projects, and potentially provide enhanced support for future funding of GSI project in the Santa Clara Valley.

Permittee staff will be expected to add and update GSI projects within their jurisdiction at least annually in support of annual reporting requirements. Program staff will maintain data quality, ensure the project is drawn correctly on the map, and continue to improve the web application.

## 2. Database/ Web Application Structure

The GSI Database Web Application (database, website, mapping interface and GSI dashboard) was developed in-house by Program staff utilizing open source technology, creating a website that is modern, fast, and is completely customizable<sup>2</sup>. Some of the features of the web application include:

---

<sup>1</sup> California Regional Water Quality Control Board, San Francisco Bay Region. Municipal Regional Stormwater NPDES Permit Order R2-2015-0049 NPDES Permit No. CA612008. November 19, 2015.

<sup>2</sup> Open source technologies behind the web application include PostGIS, DataTables, R Shiny, Bootstrap, Fancybox, Leaflet, and PhpSpreadsheet.

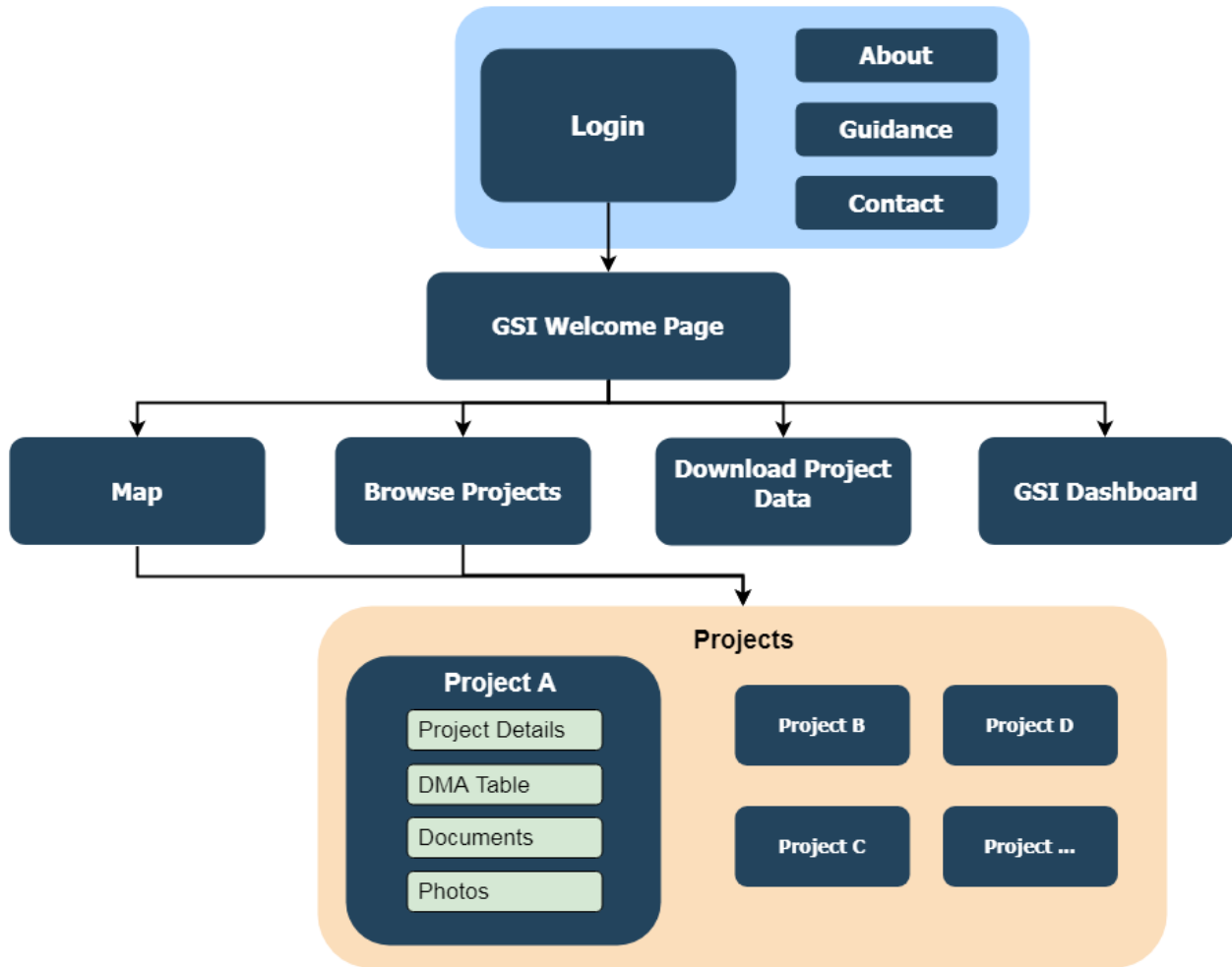
- View and query data in a tabular format;
- View data in a map;
- Download project data to a spreadsheet, KML, or shapefile;
- Ensure that all necessary project data is entered correctly and provide immediate feedback about any missing or incorrect data;
- Add or edit multiple projects at a time via a spreadsheet upload;
- Allow users to upload photos and documents for associated projects; and
- View an interactive dashboard summary of all GSI projects.

Program staff will continue to improve the web application by addressing bugs and adding features. For example, by FY19-20 reporting time it is expected that the web application will assist Permittees with output tables for annual reporting. When the RAA development is completed by Paradigm Environmental, the two systems will work together allowing for the web application to provide calculations and feedback on POC load reductions, runoff volumes reduced, and progress toward Total Maximum Daily Load (TMDL) goals. Potentially, SCVURPPP can continue to expand the web application to support other MRP provisions such as monitoring, and update the current trash reduction web application.

The GSI web application is currently organized as shown in Figure 1. The guidance (this document) along with other supporting documents are available from the Guidance page. Above each of the web pages is a header which allows users to open the About, Guidance, or Contact pages. After users log on, they are taken to a Welcome page with four options:

- View Map of Projects
- Browse/Edit/Upload Project Data
- Download Project Data
- GSI Dashboard

Within the Map and the Browse Projects pages, users can link to a webpage for each project with details of that project. Projects can be added or edited one at a time via the Browse Projects or the Project Details page, or they can be added or edited as a batch via a spreadsheet using the Batch Upload functionality on the Browse Projects page.

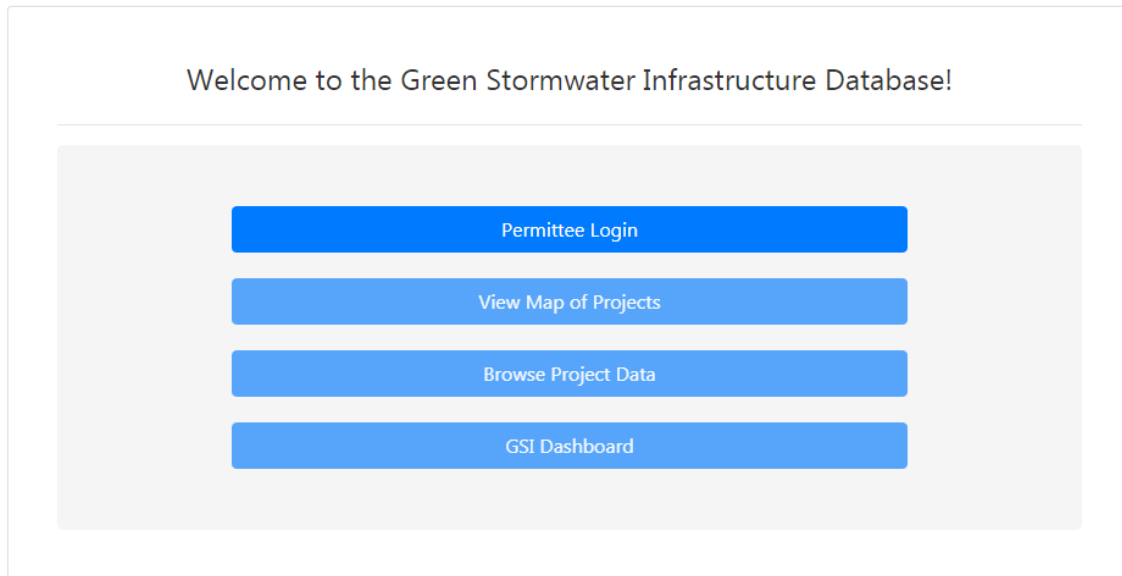


**Figure 0-1.** Organization of the GSI web application

The Program will continue to provide tools to assist Permittees with gathering GSI project information. Existing tools include the Program’s C.3 Data Form, which contains the bulk of the project-specific data inputs needed for all C.3 regulated projects. Permittees are already using this form to review and approve projects during the planning phase. In the future, the Program may also develop data forms to assist Permittees in gathering information on public green street and regional retrofit projects that are constructed.

### 3. Login/User Permissions

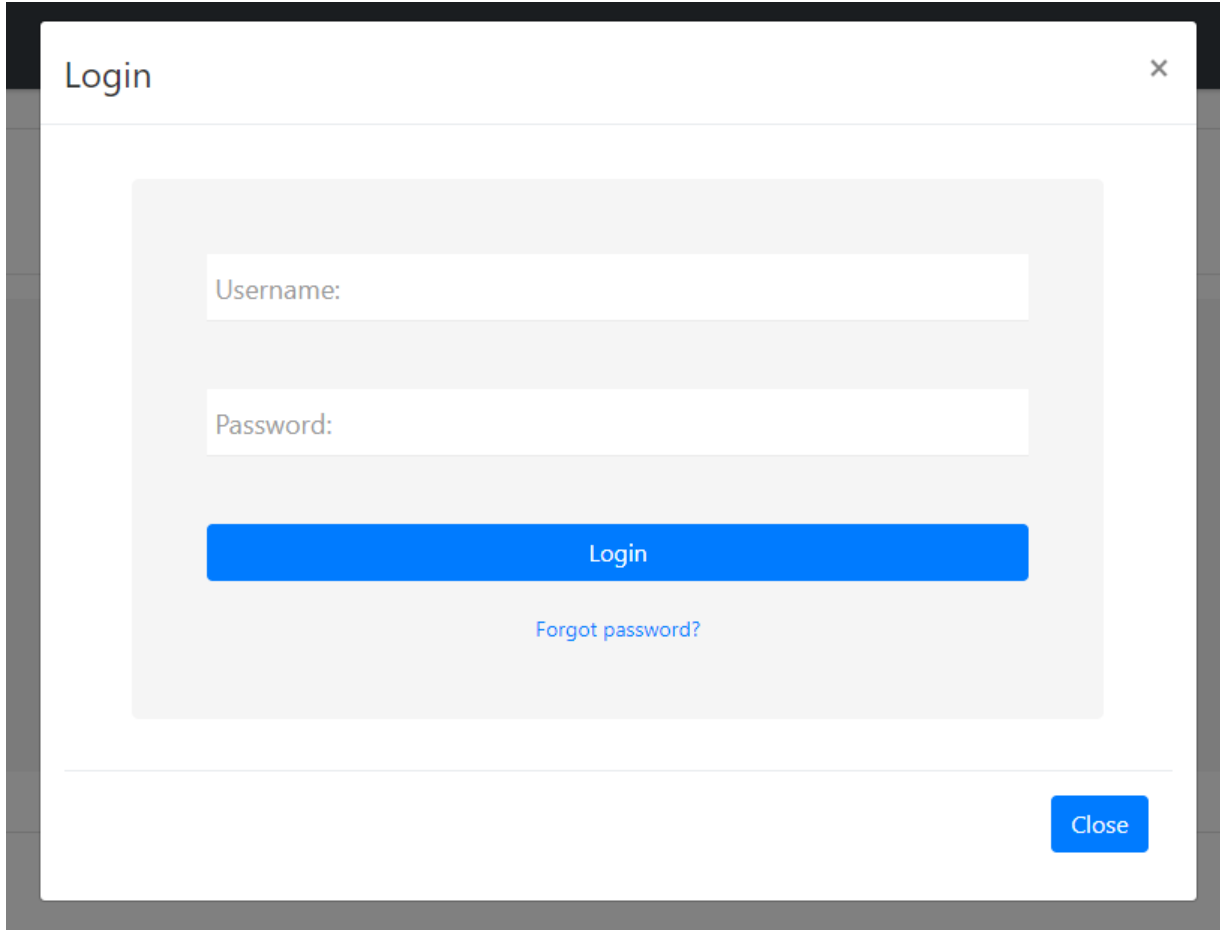
The first web page that users see is an initial menu page (Figure 2). At first, project details will not be accessible until after the user has logged in. Upon clicking the ‘Permittee Login’ button, a login window (Figure 3) will appear, requiring proper credentials, given to each Permittee by Program staff. Each user from an agency will use the same login credentials. If users encounter any difficulty logging in, they can contact [gsi@scurppp.org](mailto:gsi@scurppp.org) or Program staff using the contact link in the navigation bar in the upper right corner of the website.



Need help? [Contact us.](#)

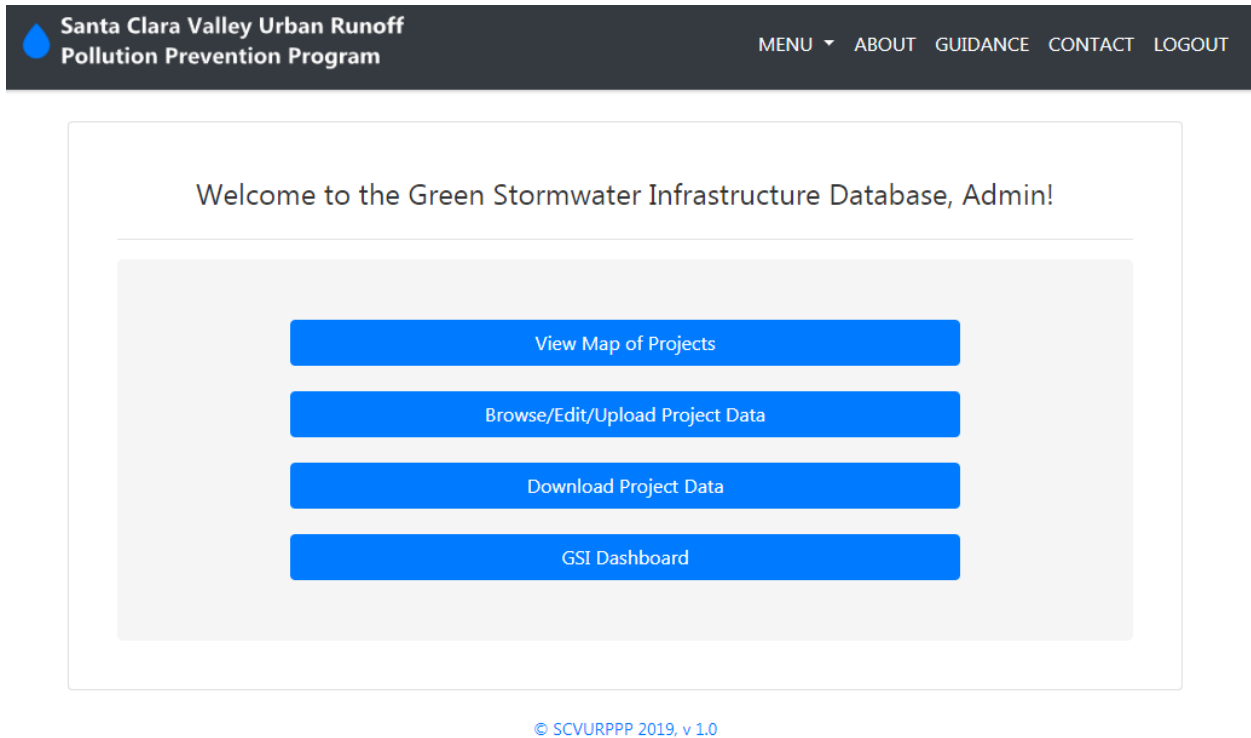
© SCVURPPP 2019, v 1.0

**Figure 0-1.** GSI Database Initial Screen (<http://scvurppp.org/gsi>)



**Figure 3.** GSI Database Login Modal

After successfully logging in, users will be directed to a Welcome page with a menu to select four different options: “View Map of Projects”, “Browse/Edit/Upload Project Data”, “Download Project Data”, and “GSI Dashboard” (Figure 3). These options are also available in the dropdown menu in the navigation bar of every web page.



**Figure 4.** Main Menu home page provides options for users (<http://scvurppp.org/gsi/home.php>)

The web application has three levels of permission. Only Program staff will have administrator privileges, allowing them to view and edit all data. Each Permittee will have editing access for their own data if they are logged on. Currently the third level of permission, public access, is not available. When this becomes available (expected late 2019), the public will have viewing access to a subset of the attributes and only for constructed projects. These attributes will include items such as project name, location, type of treatment, year completed, and project area, and exclude any documents and data on Drainage Management Areas (DMAs). A summary of user permissions is in Table 1.

**Table 1.** User permissions for Editing and Viewing GIS project

User Permissions	Editing	Viewing
Program Staff (Administrator)	Can edit all data	Can view all data
Permittee Staff	Can edit all data for projects within their jurisdiction	Can view project map of all projects, but can only view data from within their jurisdiction in Project Table
Public	No editing abilities	Will be able to view limited data including project map, dashboard, and table with only the basic information on each project (Expected to be available in late 2019).

## 4. Viewing Project Data

From the Welcome page with the four options, users can select to view a map of all projects (option 1) or an overview table of all projects (option 2). From each of these pages, users can select a specific project and then view the project details for that project.

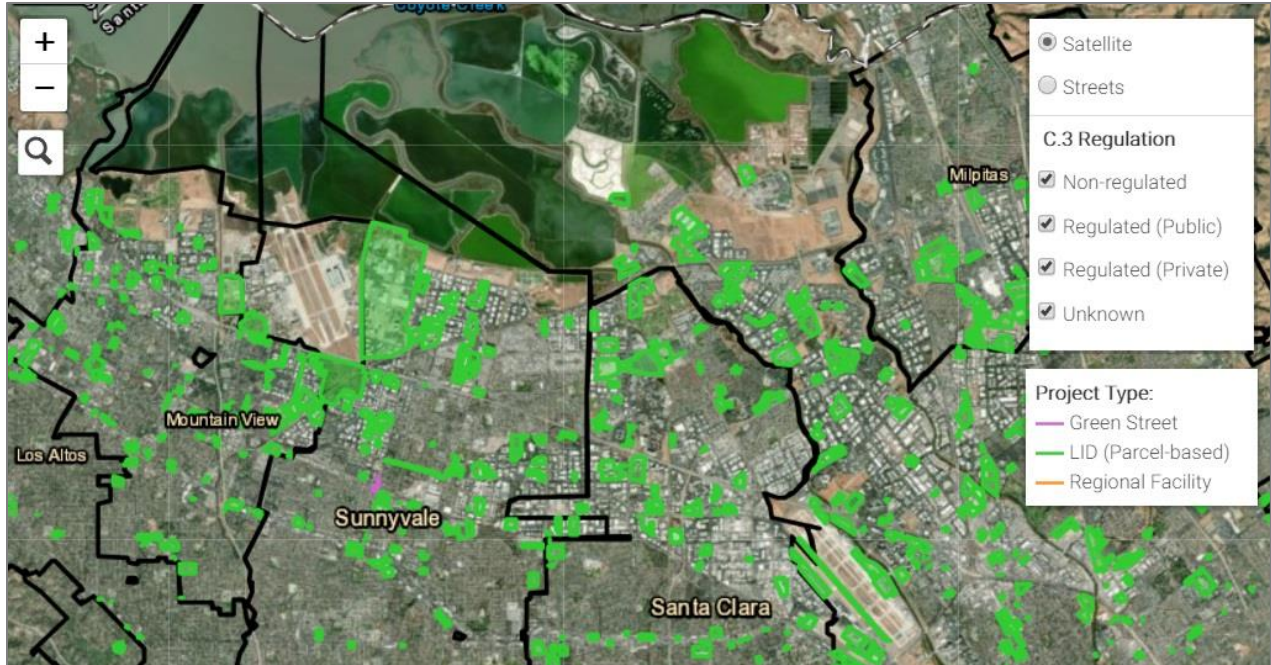
### 4.1. Project Overview Map

Clicking on the “View Map of Projects” option will show a Project Overview map that shows the boundaries and some basic attributes for every project. Users have the option to filter the projects by:

- Permittee
- C.3 Regulated (i.e., Yes or No)
- Project Status (Constructed, Under Construction)
- Ownership (Public, Private)
- Treatment Category (LID, Non-LID, Both LID and Non-LID, Unknown)
- Project Type (i.e. Parcel-based, Green Street, or Regional Facility)
- Fiscal year during which the project was/will be completed.

Currently, there is no ability for Permittees to draw or edit project boundaries. At least annually Program staff will draw the boundaries for all projects. When a Permittee adds a new project via the table or batch upload method, a small square will be added to the map either at the coordinates or the address provided.

There are two ways to zoom in and out on the map - the plus/minus controls on the upper left, or by scrolling forwards/backwards with the mouse wheel. Clicking on a project will trigger a pop-up window with basic project information and a link to the “Project Details” page, which is described in Section 4.3.



**Figure 11.** Project Overview Map (<http://scvurppp.org/gsi/map/>)

Additionally, the user can further customize the map by using the options in the dropdown menu in the top right corner:

- Change the default baseline map to a satellite or hybrid view
- Display additional map layers on top of the GSI project layer: county, city and watershed boundaries, creeks, and old industrial areas.

## 4.2. Project Overview Table

From the Welcome page, clicking on the second button, or “Browse/Edit/Upload Project Data” will display a Project Overview Table for all Santa Clara Valley GSI projects, or for a subset of projects by Permittee if the user is logged in (Figure 4). This table lists a subset of project data, including the following fields<sup>3</sup>:

- SCVURPPP Project ID
- Permittee
- Project Status
- Project Name
- Project Location/Address
- Project Type
- Is the project C.3 Regulated?
- Stormwater Treatment Category
- Public/Private?

<sup>3</sup> Refer to Appendix A for descriptions of each field.

- FY Completed
- Total Project Area

Users can view, edit, or delete projects within their respective jurisdiction. Each column can be sorted ascending or descending, and some of the columns can be filtered by selecting from the available options above the columns. There is also a search bar in the upper right which will match any value in any of the columns in the table. The table will expand or contract depending on the width of the browser window and is usable on all types of devices. If the browser window is narrowed beyond a certain point, a blue plus sign will appear on the left and when clicked will show the remaining attributes.

**Santa Clara Valley Urban Runoff Pollution Prevention Program** MENU ▾ ABOUT GUIDANCE CONTACT LOGOUT

**GSI Database** CAMPBELL PROJECT OVERVIEW TABLE

Show 10 entries Search projects:

[Add Project](#)
[Edit Project](#)
[Delete Project](#)
[Batch Upload Data](#)

SCVURPPP Project ID	Permittee	Status	Project Name	Location	Project Type	Regulated Project?	Stormwater Treatment Category	Additional Details
GSL_CMP_0005	Campbell	Constructed	Marriot 95-units	690-700 E Campbell, Campbell, CA	Parcel-based	Yes	LID	<a href="#">Click for details</a>
<p><b>Public/Private?</b> Private</p> <p><b>FY Completed</b> FY05-06</p> <p><b>Total Site Area (acres)</b> 0.94</p>								
GSL_CMP_0006	Campbell	Constructed	Kohl's/Bed Bath & Beyond	525 E. Hamilton, Campbell, CA	Parcel-based	Yes	LID	<a href="#">Click for details</a>
GSL_CMP_0009	Campbell	Constructed	McGlinchy Business Ctr	700 E. McGlinchy, Campbell, CA	Parcel-based	Yes	LID	<a href="#">Click for details</a>

**Figure 0-1.** Overview table of database ([http://scvurppp.org/gsi/scc\\_gsi.php](http://scvurppp.org/gsi/scc_gsi.php))

The editing toolbar on the upper left side of the table allows users to add, edit, delete, and batch upload project data. To edit or delete a project, users must first select a row. The edit and delete functions are disabled unless a project is selected. The editing, deleting, and uploading processes are described in greater detail in Section 5 of this Guidance Document.

### 4.3. Project Details

Selecting the “Click for details” link in the “Additional Details” column in the overview table will go to that project’s respective “Project Details” page. The Project Details page is a unique page containing more

detailed information and resources associated with each project. Users can access the “Edit entry” screen for the individual project by clicking the “Edit Project” button. A map displaying the project boundaries is on the right, with a table containing all the project’s details on the left (Figure 5). Any newly entered project will only display a small square in the map until Program staff add the correct project boundaries.

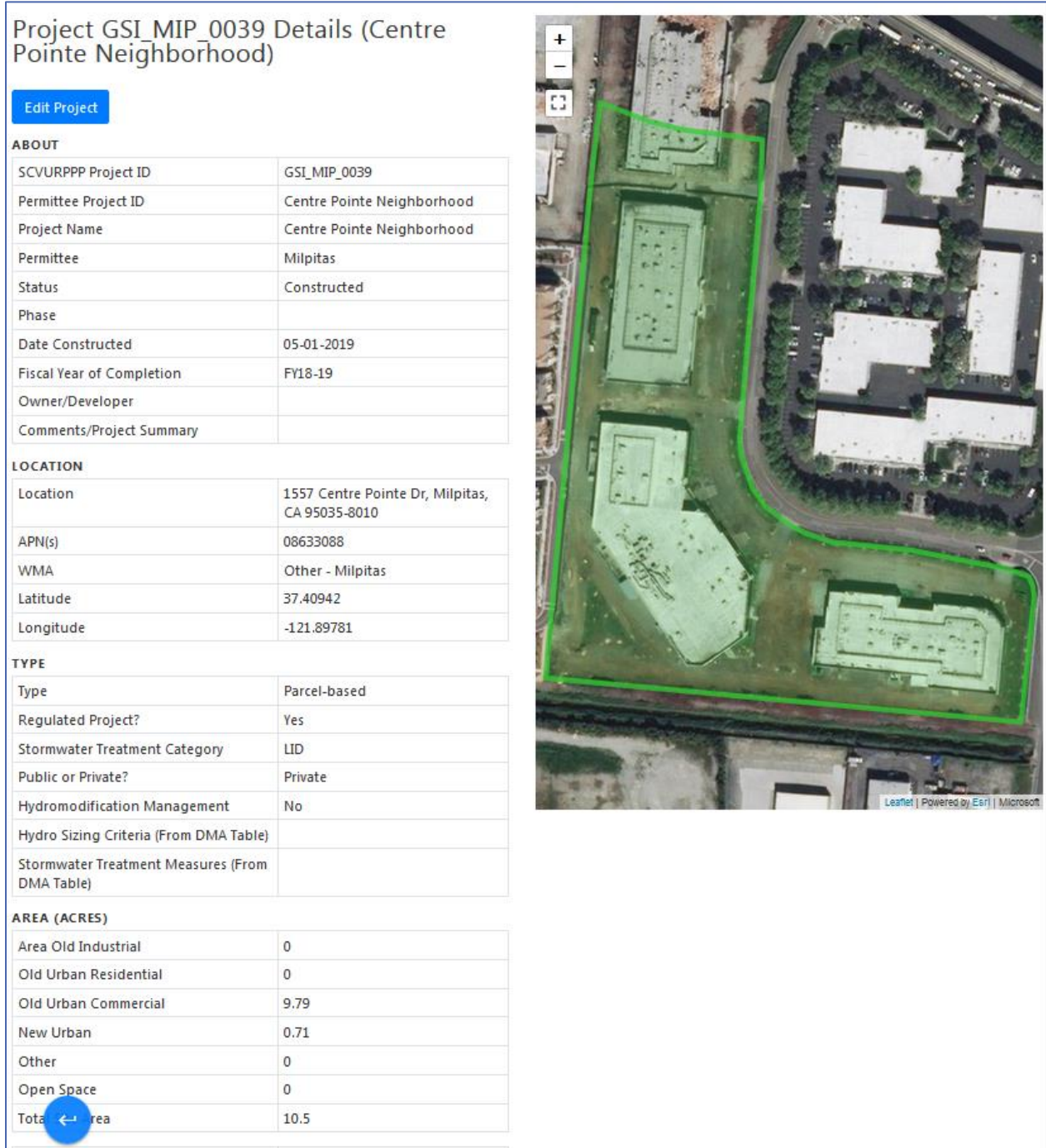


Figure 0-2. Project details table and map with project boundary

### Drainage Management Area (DMA) Summary Table

Below the project details table is the Drainage Management Area (DMA) Summary Table (Figure 6). Users can add, edit, delete, and batch upload the DMA data with the toolbar. The editing, deleting, and uploading processes are described in greater detail in Section 5 of this Guidance Document.

Drainage Management Area (DMA) Summary Table						
<span>New DMA</span> <span>Edit DMA</span> <span>Delete DMA</span> <span>Batch Upload</span>						
SCVURPPP Project ID ↑↓	Project Name ↑↓	Drainage Area # ↑↓	Impervious Area(ft <sup>2</sup> ) ↑↓	Pervious Area(ft <sup>2</sup> ) ↑↓	Site Design Measures or Stormwater Treatment Measures ↑↓	Hydraulic Sizing Criteria ↑↓
GSL_MIP_0039	Centre Pointe	1	324	423	Interceptor trees	1a: Volume - WEF Method
GSL_MIP_0039	Centre Pointe	1	45	62	Green roof	1b: Volume - CASQA BMP Handbook Method
GSL_MIP_0039	Centre Pointe	3	96	1	Interceptor trees	2c: Flow - Uniform Intensity Method

**Figure 0-3.** DMA Summary Table

### Project Documents Table

Below the DMA table, the project documents table displays any documents that Permittees have uploaded to the GSI web application (Figure 7). Although not required and not used for any calculations, uploading documents provides a repository where project information can be stored in a centralized location. It may also help in quickly accessing documentation about the treatment area for each project when treatment areas are drawn. All files are stored on the secure server and are accessible through the project documents table. The “Upload Project Document” button directs users to an uploading window where documents for the project can be uploaded. The Project Files uploading process will be described in more detail in Section 5: Project Data Entry and Editing.

Project Documents

[Upload Project Documents](#) ←

Document Name	Description	Document Date	View Document
Centre Pointe-Storm Water Control Plan 2017-11-08.pdf	Centre Pointe-Storm Water Control Plan 2017-11-08	2018-07-19	<a href="#">Centre Pointe-Storm Water Control Plan 2017-11-08.pdf</a>

**Figure 0-4.** Project Documents Summary Table

### Project Photos Table and Gallery

Below the Project Documents Table, the Project Photos table displays project photo details associated with the respective project (Figure 8). Users can upload photos of type png or jpeg. Although not required, the file sizes should be kept to between 100KB and 5MB. All photos are stored on the secure server and rendered below the table in an interactive photo gallery (Figure 9). The “Upload Project Photo” button directs users to an uploading window where photos for the project can be uploaded. If requested, an initial upload of photos or documents can be performed by Program staff so that many files can be initially uploaded.

Clicking on any photo will open an image gallery where users can pan through the photos that have been uploaded for the project. Users can right click to download each project photo. Future functionality will include the ability to select a primary photo for a project that is used in the map popup and select which photos are available for the public to see.

## Project Photos

Upload Project Photos

Photo Name	Description	Image Date
CP1.jpg	Centre Pointe 1	2018-07-19
CP2.jpg	Centre Point 2	2018-07-19



Figure 0-5. Project Photo Summary Table and example first photo

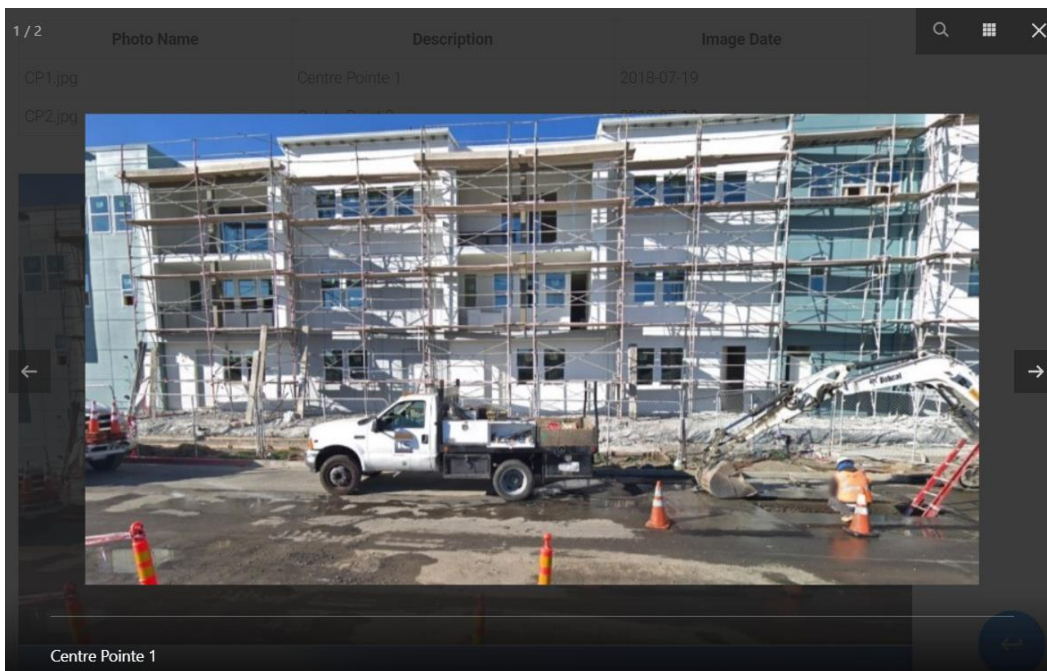
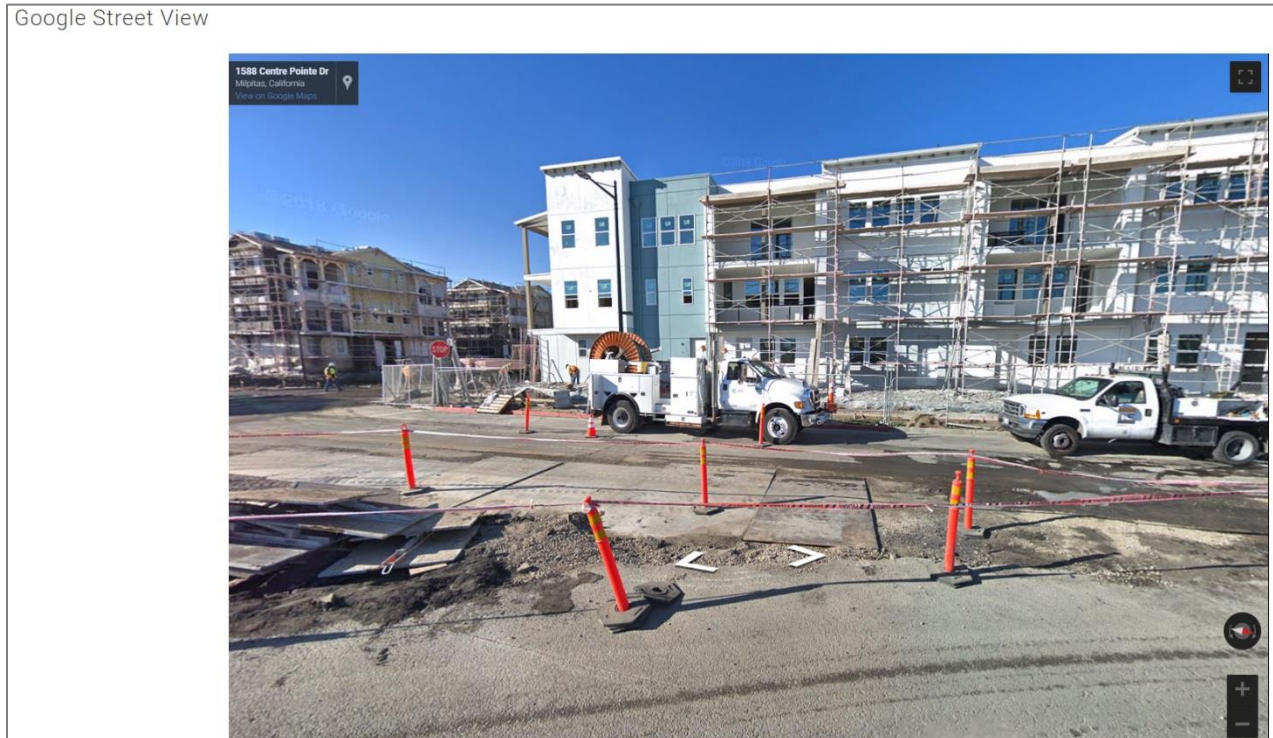


Figure 9. Project Photo gallery

## Google Street View

The Google Street View will show an interactive street level view of the project located at the address provided. Clicking on the “View on Google Maps” link in the upper left will provide full-page Street View functionality and allow users to view the date of the Street View image and any historical images if available. This functionality is available for most of the projects in the database but is not guaranteed because of its dependency on Google Street View data availability.



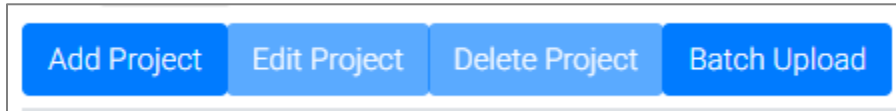
**Figure 10.** Project’s Google Street View

## 5. Data Entry and Editing

Permittees can either add or edit project data individually or use an Excel spreadsheet template developed by Program staff to edit or add multiple projects at a time. One or more projects can be deleted at a time in the Browse Projects page, but projects cannot be deleted via the spreadsheet. Additionally, Permittees can upload documents or photos for each project into the system via the Project Details page, as described above. Any data previously entered into the Program’s system will be editable by Permittees such as changing a project’s status from “Under Construction” to “Constructed”.

## 5.1. Add/Edit/Delete Project Data from Browse Projects Page

From the Browse Projects page, projects can be added, edited, or deleted using the corresponding buttons at the top of the table (Figure 12). Users can add or edit individual projects or delete multiple projects if more than one is selected (using the CTRL or SHIFT key). The Batch Upload button will open a popup window where users can select a spreadsheet in the provided format to add or edit multiple projects.



**Figure 12.** Buttons allowing users to add, edit, delete, and batch upload project data.

### Add Project

Clicking on the Add Project button will open a “Create new entry” pop-up with blank fields for the Permittee to enter data (Figure 13). This method of adding projects is the easiest way for adding a single project at a time. Any fields that have an asterisk after them are required, although it is encouraged to fill out as many fields as possible. Project data related to stormwater treatment methods and hydrologic sizing criteria are filled out later in the Drainage Management Area (DMA) table in the Project Details page. Field definitions and guidance are expanded upon in Appendix A: Glossary.

When a project is added, the following events happen automatically when the Browse Project page is refreshed:

- A SCVURPPP Project ID will be created for that project and the number at the end of the ID will be one higher than the highest existing number for that specific Permittee. The SCVURPPP Project ID can only be edited by Program staff.
- If a Permittee Project ID is not given (which is common), then it will be assigned the Project Name.
- If either latitude/longitude coordinates or an address is entered, then a small square will appear at that location on the map and Project Details page.
- The Fiscal Year of Completion will be calculated based on the Date Constructed attribute. If the Date Constructed is edited to a different fiscal year, it may not be recalculated automatically.
- The POC land use category (i.e. Old Industrial, Old Urban) will be assigned based on the previous land use at the center of the project location. This is subject to further editing when Program staff draw the project boundaries.

### Create new entry ✕

**Project Name:\***  
Use the same name that was reported in Permittee's Annual Report.

**Permittee Project ID:**  
If one exists, enter the Permittee's unique internal Project ID.

**Permittee:\*** Campbell

**Status:\*** Under Construction

**Project Type:\*** Parcel-based

**Is it a C.3 Regulated Project?\*** Yes

**Stormwater Treatment Category\*** LID

**Public or Private?\*** Yes

**Phase:**

**Date Constructed:**  
Enter the estimated month and year the project construction was completed.

**Address:\***  
Enter the street address.

**APN(s):**  
Enter the APN(s) for a Parcel-Based project.

**Latitude:**  
Example: 37.34567

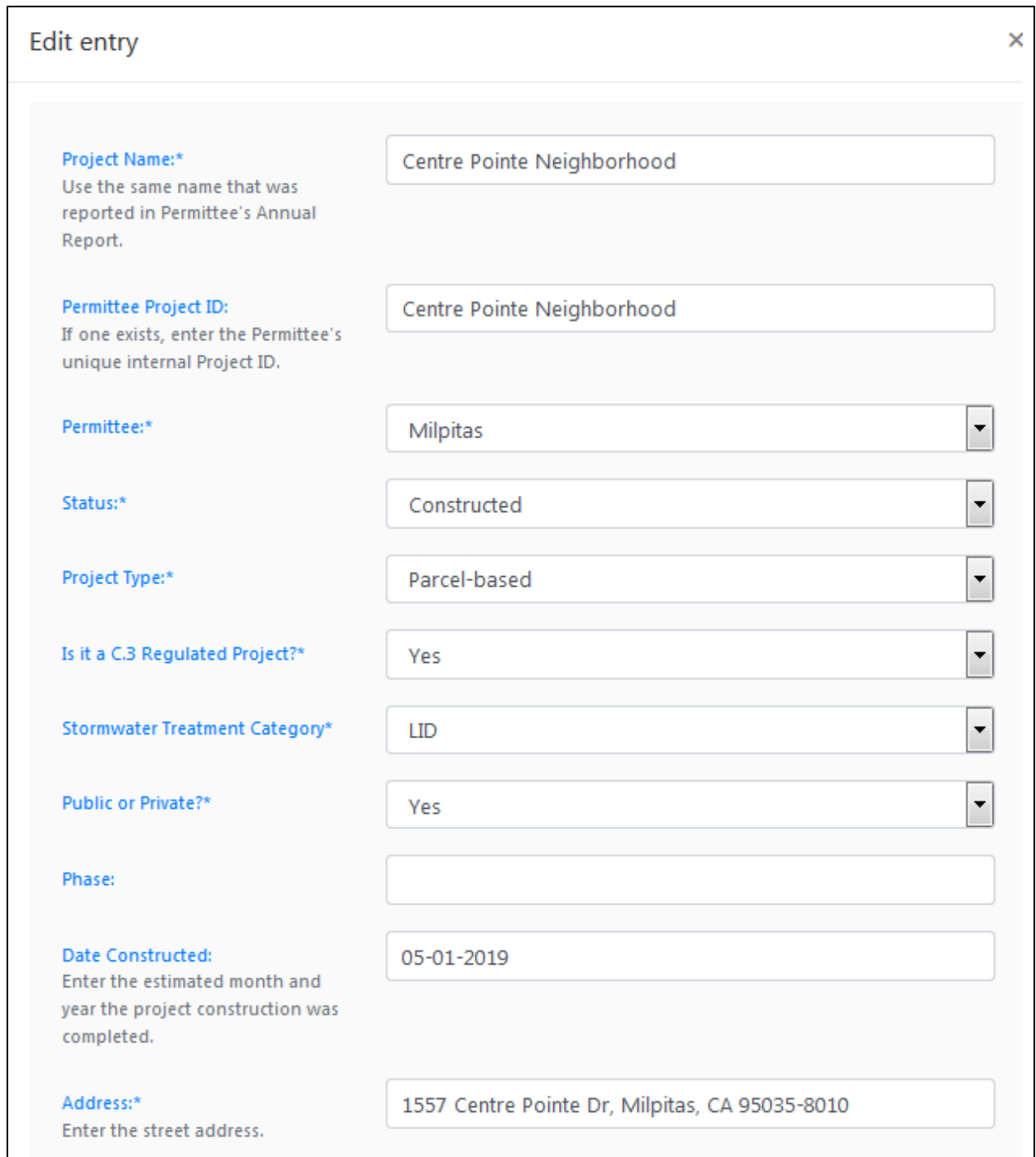
**Longitude:**  
Example: -122.01234

**Project Owner/Developer:**

**Figure 13.** The “Create new entry” pop-up screen

## Edit Project

Editing a project can be done in either the Browse Projects or Project Details page. A pop-up editing screen will appear that looks exactly like the Add Project pop-up (Figure 14).



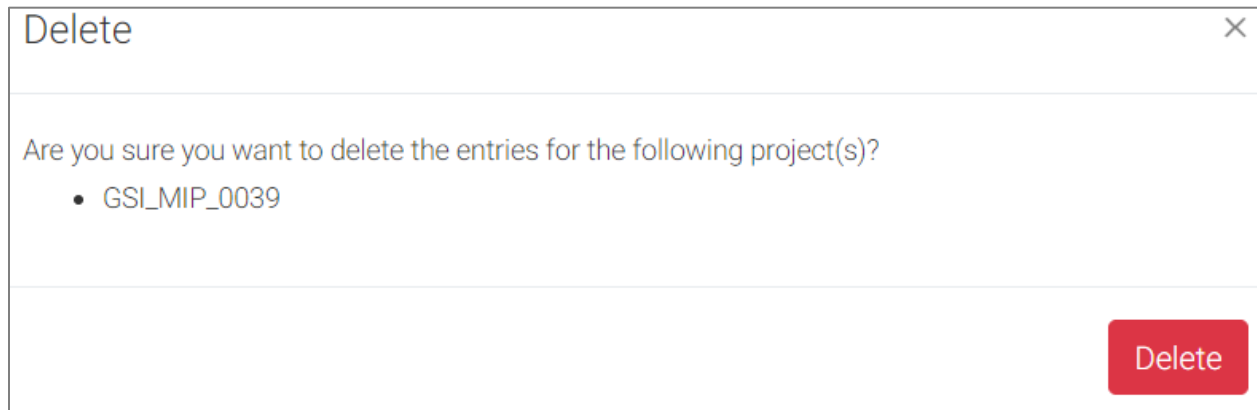
The screenshot shows a pop-up window titled "Edit entry" with a close button (X) in the top right corner. The form contains the following fields:

- Project Name:\*** (Text input): Centre Pointe Neighborhood  
Use the same name that was reported in Permittee's Annual Report.
- Permittee Project ID:** (Text input): Centre Pointe Neighborhood  
If one exists, enter the Permittee's unique internal Project ID.
- Permittee:\*** (Dropdown menu): Milpitas
- Status:\*** (Dropdown menu): Constructed
- Project Type:\*** (Dropdown menu): Parcel-based
- Is it a C.3 Regulated Project?\*** (Dropdown menu): Yes
- Stormwater Treatment Category\*** (Dropdown menu): LID
- Public or Private?\*** (Dropdown menu): Yes
- Phase:** (Text input):
- Date Constructed:** (Text input): 05-01-2019  
Enter the estimated month and year the project construction was completed.
- Address:\*** (Text input): 1557 Centre Pointe Dr, Milpitas, CA 95035-8010  
Enter the street address.

Figure 14. The "Edit entry" pop-up screen

## Delete Projects

Projects can only be deleted from the Browse Projects page and not via the spreadsheet or Project Details page. To delete a single project, select it by clicking with the mouse on that row in the table and then pressing the “Delete Project” button. A pop-up will then appear confirming that the user wants to delete the project (Figure 15). To delete multiple projects, hold the CTRL or SHIFT key and click the rows in the database to select multiple projects. It is easiest to hold down CTRL to select projects that are not adjacent in the table and hold down SHIFT if the projects are adjacent in the table. Click any project again to deselect it. Users should be careful when deleting projects because all deletions are permanent. The database is backed up daily, but users should not rely on these backups. If projects are deleted from the project table, the associated boundaries for the project on the map will be deleted and database links to the photos and documents will also be lost. Contact Program Staff if any data should be restored to a previous state.



**Figure 15.** The “Delete” pop-up window

## Batch Upload

When the “Batch Upload” button is clicked, the pop-up seen in Figure 16 is displayed. The same pop-up will appear when the “Batch Upload” button is clicked on the DMA table of the Project Details because the DMA batch upload process uses the same Excel Spreadsheet Template. If the “Download Project Template” button is clicked a blank template will be downloaded. If a user downloads data via the “Download Project Data” page, then a spreadsheet populated with existing data will be downloaded, streamlining the data editing and uploading process.

The template has three tabs: a Guidance tab briefly describing the template, a Projects tab where project data is entered, and a DMA tab where DMA data is entered. Using the Excel Spreadsheet Template, users can add or edit multiple projects or DMAs to the database at the same time. If a Project Name already exists in the database, then all data for that project in the database will be replaced with the data contained in the spreadsheet. If the Project Name does not already exist in the database, then a new project will be added, which will also trigger the events mentioned in the bulleted list in the Add Project section above.

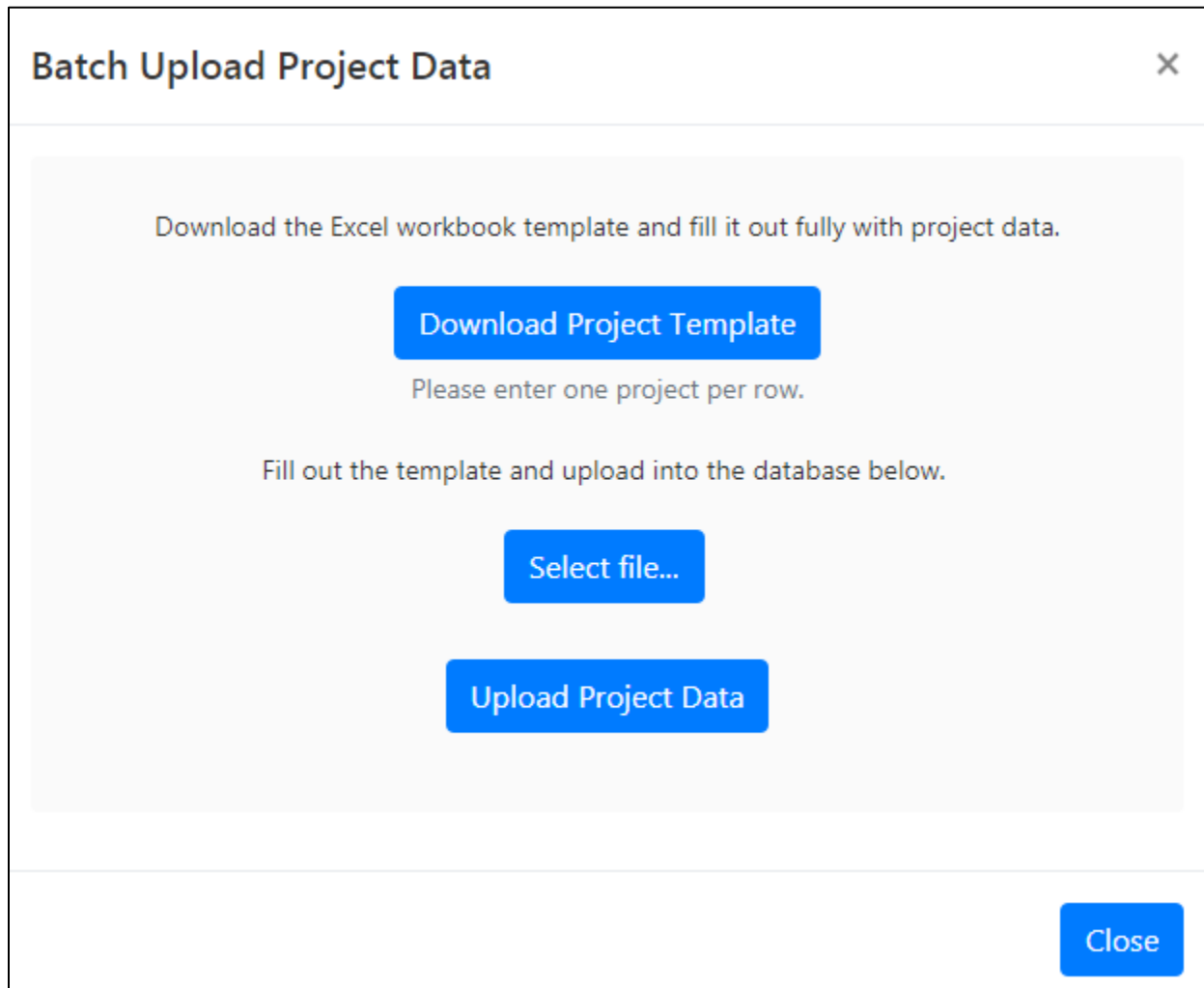


Figure 16. Batch Upload Option

In the Excel Spreadsheet Template, it is important to not add or delete columns since the web application requires the columns in a specific order. After the spreadsheet is uploaded, users will receive feedback about which projects have been added or edited. If there is an omission of a required field or an entry in the spreadsheet that does not pass all the error checking rules, that Project or DMA will not be added or edited, and the user will receive a message in the output table describing the specific issue. The user should fix the issue and re-upload the spreadsheet.

## 5.2. Project Document and Photo Upload

In the Project Details page, users can upload either photos or documents associated with a project by clicking either of the buttons seen in Figure 17.



**Figure 17.** “Upload Project Photo” and “Upload Project Document” Buttons

After clicking on either button, a window will open that enables document or photo uploading for the respective project (Figure 18). After uploading, these photos and documents will be available to view and download on the Project Details page. For documents, files should have an extension of either .doc, .docx, .csv, .xlsx, or .pdf. For photos, files should have an extension of either .jpg, jpeg, or .png.

### Upload photo for GSI\_CMP\_0053 ✕

**Select photo...**

All image file types accepted. (e.g. .png, .jpg)

Photo Date:

When was the photo taken?

Description:

Please describe the photo being uploaded.

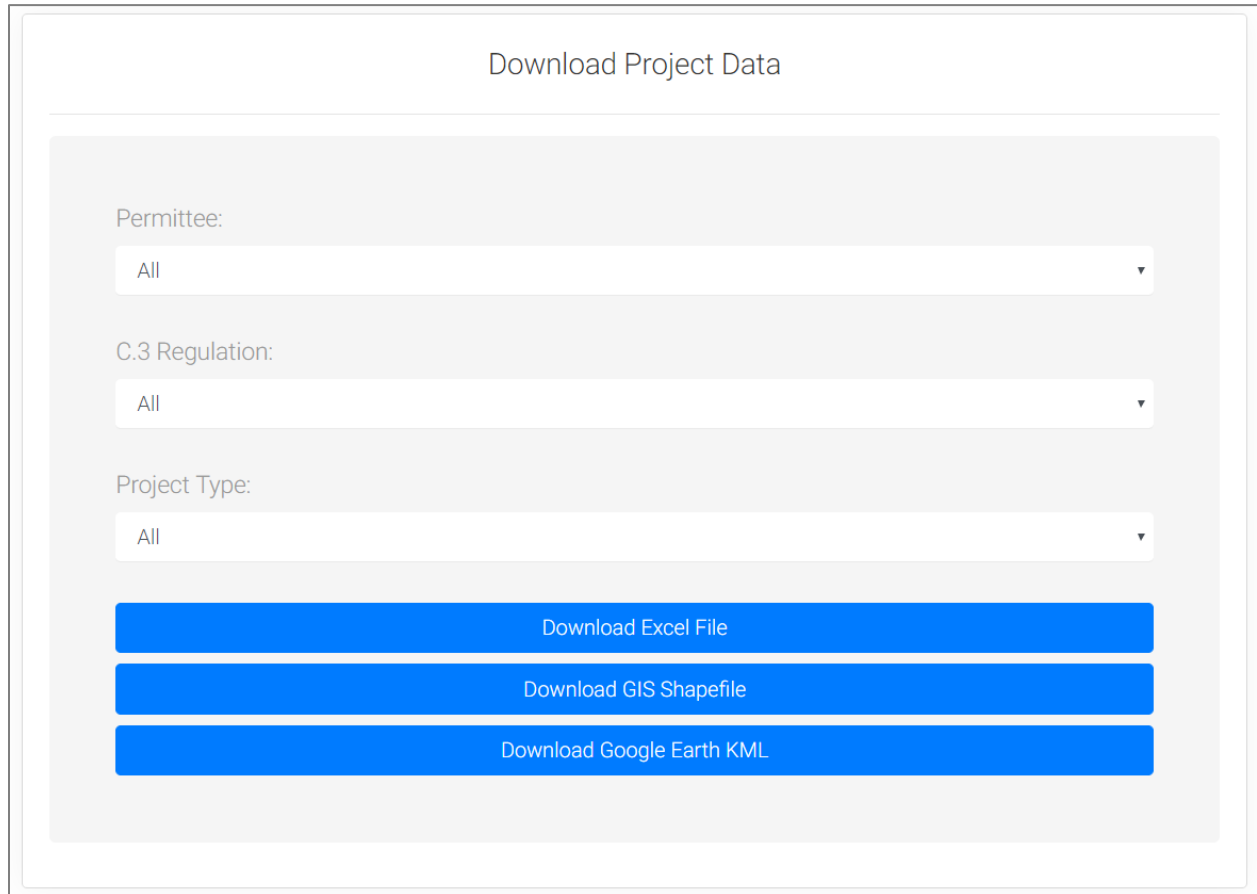
**Upload photo**

**Close**

**Figure 18:** Upload Project Photo Window

## 6. Data Download/Export

The third button on the Welcome page is “Download Project Data”. This page has Dropdown menus allowing users to filter project data for download. The data is queried and exported to either the same Excel Spreadsheet Template used to batch upload projects, a GIS shapefile, or a Google Earth KML.



Download Project Data

Permittee:  
All

C.3 Regulation:  
All

Project Type:  
All

Download Excel File

Download GIS Shapefile

Download Google Earth KML

**Figure 19.** Download Project Data screen (<http://scvurppp.org/gsi/download>)

## Appendix A - Terminology and Field Definitions of Permittee Inputs

### A. Project Table Field Inputs

#### Project Name

Use the same name that was reported in Permittee's Annual Report.

#### Permittee Project ID

If one exists, enter the Permittee's unique internal Project ID.

#### Status

Select the appropriate project status from the options below:

Status	Description
Under Construction	A project currently undergoing construction.
Constructed	A project that is physically constructed.

#### Project Type

Select the appropriate project type from the options below:

Project Type	Description
Green Street	Stormwater treatment measures located in the public right-of-way. Green streets do not include parcel-based projects located on public property.
Parcel-based	A land planning and engineering design approach with a goal of reducing stormwater runoff and mimicking a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source, or onsite. LID projects include both public or private projects
Regional Facility	A private or public stormwater treatment or hydromodification control facility that collects runoff from a large area or from multiple development projects and discharges into the same watershed that the C.3 Regulated Project does.

#### Is it a C.3 Regulated Project?

Select the appropriate C.3 Regulation type from the options below:

C.3-Regulated?	Description
Yes	Private and public development projects that are <i>do not</i> meet the requirements listed by MRP Provision C.3.b. ii. These projects are not subject to the requirements of Provision C.3. b.
No	Publicly-funded development projects as defined by MRP Provision C.3. b. ii. This includes public projects that create and/or replace 10,000 square feet or more of impervious surface, and restaurants, retail gasoline

	outlets, auto service facilities, and uncovered parking lots (stand-alone or part of another use) that create and/or replace 5,000 square feet or more of impervious surface. Single family homes that are not part of a larger plan of development are specifically excluded.
Unknown	Projects whose regulatory status is unknown.

**Stormwater Treatment Category**

Select the appropriate project type from the options below:

Treatment Category	Description
LID	Projects with Low-Impact Development (LID) stormwater treatment measures. The goal of LID is to reduce runoff and mimic a site’s predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.
Non-LID	Green stormwater infrastructure that is not considered to be LID in the context of the Municipal Regional Stormwater Permit (MRP), e.g. media filters.
Both LID and Non-LID	Projects with both LID and Non-LID stormwater treatment measures.
No Treatment	Projects with no stormwater treatment that can be removed from the database when it is verified that there is no treatment
Unknown	Projects for which the treatment category is unknown

**Public or Private**

Select the appropriate project type from the options below:

Ownership	Description
Public	Stormwater treatment measures located in the public right-of-way. Green streets do not include parcel-based projects located on public property.
Private	A land planning and engineering design approach with a goal of reducing stormwater runoff and mimicking a site’s predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source, or onsite. LID projects include both public or private projects

**Phase**

Describe the current phase of the project (e.g., 1 of 2, Phase 3, etc.)

**Date Constructed**

Enter the estimated month and year the project construction was completed.

**Address**

Enter the street address of the project. If no project address exists or the project is a Green Street Project, enter cross streets or other information that identifies the location of the project.

**APN(s)**

Enter the APN or range of APNs for a Parcel-Based project.

**Latitude** - optional

Enter Latitude of the project's centroid, if known.

**Longitude** - optional

Enter Longitude of the project's centroid, if known.

**Project Owner/Developer**

Briefly describe the project's owner or developer.

**Includes Hydromodification<sup>4</sup> Management?**

Select Yes or No.

A project requires hydromodification management and is subject to MRP Provision C.3.g, if it is a private or public Regulated project that meets the following three criteria:

1. Creates and/or replace one acre or more of impervious surface
2. Post-project impervious surface area is greater than the pre-project impervious surface area
3. Not located in a catchment or subwatershed that is highly developed (i.e., that is 70% or more impervious)

**Total Project Area (acres)**

For Parcel-based projects, provide the total project area (i.e., the total area of the redeveloped parcel(s)); For Green Street or Regional Facilities, provide the total treated area (i.e., the area that drains to the project)

**Comments/Project Summary**

Enter any relevant comments about the project.

**B. Drainage Management Area (DMA) Summary Table Inputs**

**Drainage Area #**

Enter the drainage area number.

---

<sup>4</sup> "Hydromodification" refers to the modification of the runoff hydrograph from a project site that is caused by land development, resulting in increased peak flows, volumes, and flow durations. The effects of hydromodification include, but are not limited to, increased bed and bank erosion in the receiving stream, loss of habitat, increased sediment transport and deposition, and increased flooding.

**Latitude - optional**

Enter Latitude of the drainage area's centroid, if known.

**Longitude - optional**

Enter Longitude of the drainage area's centroid, if known.

**Impervious Area (ft<sup>2</sup>):**

Enter the square footage of impervious area for the drainage area. Impervious areas are usually solid surfaces that don't allow water to penetrate, forcing it to run off

**Pervious Area (ft<sup>2</sup>):**

Enter the square footage of pervious area for the drainage area. Pervious areas are able to store and infiltrate rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or store and infiltrate the rainfall runoff volume described in Provision C.3.d of the MRP.

**Site Design Measures or Stormwater Treatment Measures**

Site Design and Stormwater Treatment Measures used at the project site. Refer to the definitions of applicable GSI and LID Control Measures in Appendix B.

**Hydraulic Sizing Criteria**

Select the hydraulic sizing criteria used to calculate the amount of stormwater runoff from C.3 Regulated Projects that must receive stormwater treatment. A project may have multiple hydraulic sizing criteria. Differentiate each type per drainage area in the DMA table. Detailed descriptions of each criterion are available in the SCUVRPPP C.3 Handbook<sup>5</sup>.

<b>Criterion</b>	<b>Description</b>
1a	Volume - WEF Method
1b	Volume - CASQA BMP Handbook Method
2a	Flow - Factored Flow Method
2b	Flow - CASQA BMP Handbook Method
2c	Flow - Uniform Intensity Method
3	Combination Flow and Volume Design Method
Not Applicable	Select only for non-regulated projects

<sup>5</sup> SCUVRPPP. 2016. C.3 Stormwater Handbook. Prepared by EOA, Inc.

## Appendix B: Description of Green Stormwater Infrastructure Measures

### Bioretention area lined\* w/ underdrain:

A stormwater treatment measure designed to collect, store, and treat stormwater runoff using vegetated depressions and BSM. They can be any shape, including linear. This type of bioretention area is lined on the bottom with an impermeable liner, or is contained within a concrete box, and includes an underdrain installed at the bottom of the aggregate layer to remove treated runoff from the system.

Alternative terms: *Lined bioretention, biotreatment*



**BIORETENTION AREA IN CONCRETE BOX WITH UNDERDRAIN, EMERYVILLE, CA**  
(SOURCE: EOA, INC.)



**UNLINED BIORETENTION AREA WITH UNDERDRAIN, SOUTHGATE NEIGHBORHOOD STORM DRAIN IMPROVEMENT AND GREEN STREET PROJECT, PALO ALTO, CA**  
(SOURCE: EOA, INC.)

### Bioretention area unlined w/ underdrain:

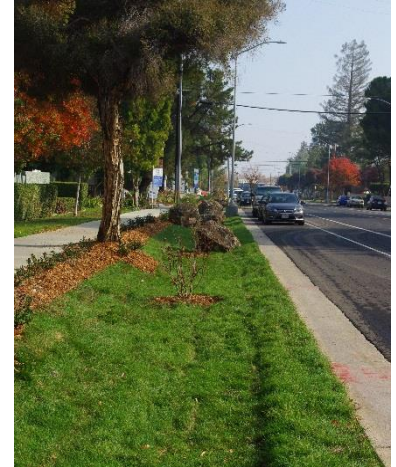
A stormwater treatment measure designed to collect, store, treat, and infiltrate stormwater runoff using vegetated depressions and BSM. This type of bioretention area is unlined on the bottom and include underdrains installed near the top of the aggregate layer to allow storage and infiltration of a portion of the runoff.

Alternative terms: *Rain garden, biotreatment*

**Bioretention area unlined w/o underdrain:**

A stormwater treatment measure designed to collect, store, treat, and infiltrate stormwater runoff using vegetated depressions and BSM. This type of bioretention area is unlined on the bottom and does not include an underdrain. This type can be installed in areas where existing soils have sufficient drainage capacity and infiltration

Alternative terms: *bioinfiltration*



**UNLINED BIORETENTION AREA, WITHOUT UNDERDRAIN, HACIENDA STREET PROJECT, CAMPBELL, CA**  
(SOURCE: CITY OF CAMPBELL)

**Bioretention area (lining/underdrain unknown):**

A stormwater treatment measure designed to collect, store, treat, and infiltrate stormwater runoff using vegetated depressions and BSM. This category should only be applied to older projects where the presence of lining/underdrain is unknown.

**Green Roof:**

Vegetated roof systems that filter, absorb, and retain or detain rainwater prior to drainage off building rooftops. A green roof can be either extensive, with 3 to 7 inches of lightweight planting media and low-profile, low-maintenance plants, or intensive with a thicker (8 to 48 inches) media, more varied plantings, and a more garden-like appearance.

Alternative terms: *Roof garden*



**GREEN ROOF, DAVID AND LUCILLE PACKARD FOUNDATION HEADQUARTERS**  
(SOURCE: CITY OF LOS ALTOS)



*FLOW-THROUGH PLANTER  
(SOURCE: EOA, INC)*

**Flow-through planter concrete lined\* w/ underdrain:**

A stormwater treatment measure lined with concrete on the sides and bottom, designed to collect runoff from a roof or other impervious surface and slowly drain it through engineered soil media into an underdrain. It has a flat bottom and vertical sides. Flow-through planters may be located at grade or above ground.

Alternative terms: *Concrete stormwater planter box, biotreatment*

**Infiltration Trench:**

A long, narrow, shallow trench filled with stone aggregate, designed to store and infiltrate stormwater runoff into the subsurface. Stormwater runoff is temporarily stored in the aggregate layer; no water is stored on the surface. The trench can be designed with pervious pavement or aggregate overlying the trench. An underdrain may be included if its outlet is raised above the required depth of storage within the aggregate.

Alternative terms: *Injection well with aggregate; infiltration column*

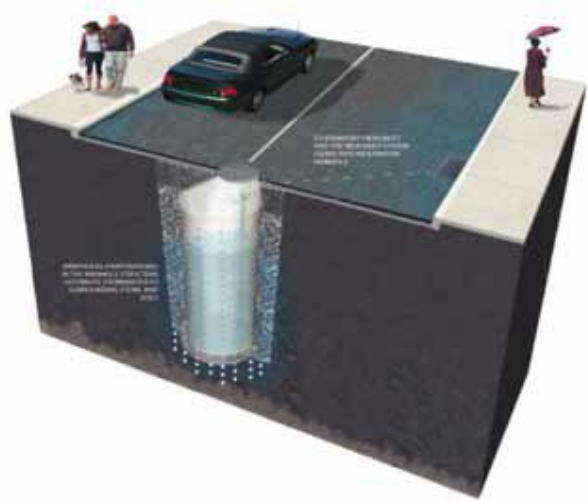


*INFILTRATION TRENCH WITH PERVIOUS  
PAVEMENT, SAN JOSE  
(SOURCE: CITY OF SAN JOSE)*

**Infiltration well/dry well**

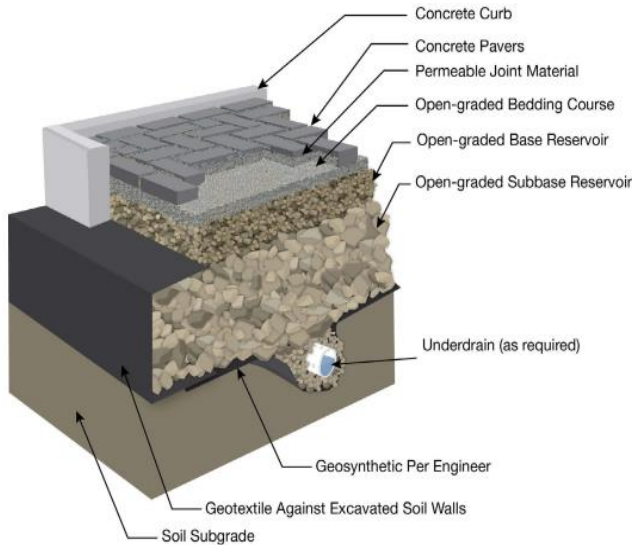
A stormwater treatment measure consisting of a pipe approximately 3 feet wide and 20 to 50 feet below grade, containing perforations at various locations along the pipe and/or at the bottom to allow infiltration into underlying soils while using minimal above ground surface area. An infiltration well must be constructed in conjunction with a bioretention area or other pretreatment measure. There is no aggregate in the well and stormwater runoff is stored in the pipe prior to infiltration.

Alternative terms: *Deep infiltration well, injection well, infiltration column*

**Interceptor trees:**

A site design measure that allows a project to earn credits toward treatment of a small area of impervious surface by planting new trees and preserving existing trees that meet minimum requirements. Trees must be located within 25 feet of ground-level impervious surface in uncompacted soil. New trees must be a minimum 15-gallon container size at planting and existing trees must have an average diameter of 12 inches at a height of 4.5 feet above the finished grade.





**PICP DESIGNED FOR PARTIAL INFILTRATION, WITH UNDERDRAIN**

*(SOURCE: INTERLOCKING CONCRETE PAVEMENT INSTITUTE)*

**Pervious pavement w/ underdrain:**

A pervious pavement system consists of a load-bearing, durable pervious surface constructed over a subbase/base structure typically consisting of compacted, open-graded aggregate. The surface layer allows water to pass through into the subbase/base, where it is temporarily stored prior to infiltration to subsurface soils or drainage through an underdrain to a controlled outlet. An underdrain is installed in the subbase/base or a protective gravel trench to allow extra flows above the design flow to drain from the system and prevent surface ponding. The underdrain discharge point should be raised above the required storage level in the subbase/base layer.

**Pervious pavement w/o underdrain:**

A pervious pavement system consists of a load-bearing, durable pervious surface constructed over a subbase/base structure typically consisting of compacted, open-graded aggregate. The surface layer allows water to pass through into the subbase/base, where it is temporarily stored prior to infiltration to subsurface soils.

Alternative terms: *Permeable/porous/pervious asphalt, permeable/porous/pervious concrete, permeable interlocking concrete pavers (PICP), permeable pavers, porous rubber, grid paving*



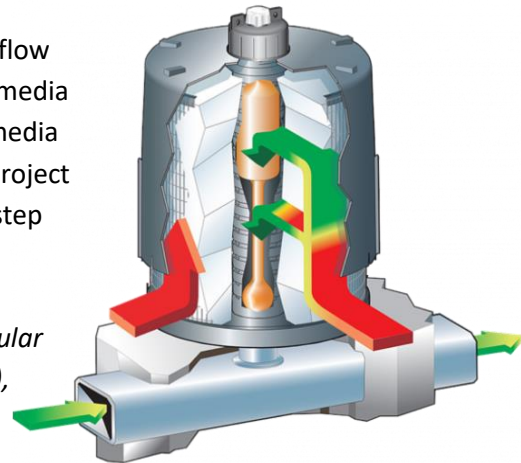
**PVIOUS PAVEMENT, OAKLAND**  
*(SOURCE: CITY OF OAKLAND)*



**Proprietary Media Filter System (MFS):**

A stormwater treatment measure that allows runoff to flow through a filter bed or cartridges filled with an absorptive media designed to remove pollutants. Since 2011, a high flow rate media filter is only allowed for stormwater treatment at a Special Project or when installed as a pretreatment facility in a multi-step treatment process.

Alternative terms: *Manufactured media filters, modular cartridge filters, bed filters (Austin or Delaware sand filters), powered filtration systems*



*FILTER CARTRIDGE, TYPICALLY USED AS PART OF ARRAY*

*(SOURCE: CONTECH STORMWATER SOLUTIONS, 2006)\**



**Proprietary Tree Filter:**

A prefabricated vault unit with a small tree or bush planted in manufactured media, underlain with drain rock and an underdrain. Since 2011, a high flow rate tree box filter is only allowed for stormwater treatment at a Special Project or when installed as a pretreatment facility in a multi-step treatment process.

Alternative terms: *Filterra®*, *proprietary high flow rate tree well filter*

**Rainwater harvest/use system:**

The capturing and storing of stormwater runoff for later use for irrigation or non-potable indoor use. Rainwater from a building’s roof gutters and downspouts may be conveyed to storage vessels, such as rain barrels or above- or below-ground cisterns.

Alternative terms: *Rain barrel, cistern*



*RAINWATER HARVESTING CISTERN, ENVIRONMENTAL INNOVATION CENTER, SAN JOSÉ*

*(SOURCE: CITY OF SAN JOSE)*

**Self-retaining areas\*:**

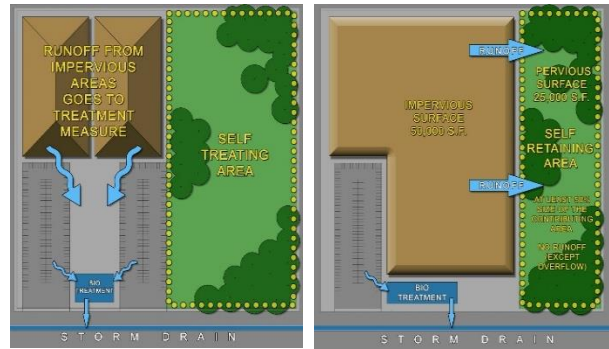
A site design measure in which an area of a development site is designed to retain the first one inch of rainfall (by ponding and infiltration and/or evapotranspiration) on itself and on adjacent areas without producing stormwater runoff. Self-Retaining Areas may include graded depressions with landscaping or pervious pavement. “Areas Draining to Self-Retaining Areas” are adjacent impervious or partially pervious areas that drain to Self-Retaining Areas.



**LANDSCAPED SELF-RETAINING AREA WITH DISCONNECTED DOWNSPOUT**  
(SOURCE: EOA)

*\*Includes areas that drain to self-retaining areas*

Examples: *Pervious pavement, and specifically designed landscaped areas adjacent to impervious areas.*



**MAXIMIZING SELF-RETAINING AREAS TO REDUCE TREATMENT AREA SIZING**  
(SOURCE: EOA)



**Self-treating areas:**

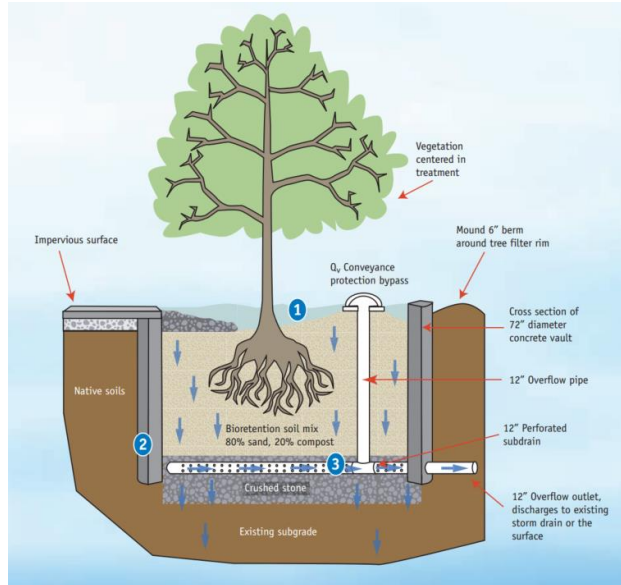
A site design measure in which an area of a development site provides infiltration, evapotranspiration, and other natural processes to remove pollutants from stormwater. Self-Treating Areas may include conserved natural open areas, areas of landscaping, green roofs, and pervious pavement. A Self-Treating Area only treats the rain falling on itself and does not receive stormwater runoff from other areas.

Examples: *Pervious pavement, green roofs, and specifically designed landscaped areas*

**Tree filter w/ Bioretention soil:**

An excavated pit, trench, or vault filled with BSM, planted with a tree and underlain with drain rock and an underdrain. The basic design is similar to that of a bioretention area or planter box, but due to its depth, may be a preferred design choice when space is limited. Systems may be open-bottom (unlined) or closed-bottom (lined / vault-based). Systems may be combined with structural soils or a modular suspended pavement system (e.g., Silva Cell) to maximize the available soil volume for tree root growth while providing load-bearing capacity under areas of pavement.

Alternative terms: *Tree pit, tree vault, tree box filters, tree filter box, tree box, tree trench filter, stormwater tree filter*



**SCHEMATIC OF A NON-PROPRIETARY TREE WELL FILTER (NOTE THAT BIORETENTION SOIL MIX AND OTHER COMPONENTS VARY FROM BAY AREA REQUIREMENTS.)**  
 (SOURCE: UNH STORMWATER CENTER 2007 ANNUAL REPORT)



**SUBSURFACE INFILTRATION SYSTEM INSTALLATION UNDER A PARKING LOT**  
 (SOURCE: CONTECH)

**Subsurface Infiltration system:**

An underground vault, pipe, or set of pipes that stores and infiltrates stormwater. Storage can take the form of large-diameter perforated metal or plastic pipe, concrete arches, concrete vaults, plastic chambers, or crates with open bottoms. These systems allow infiltration into surrounding soil while preserving the use of the land surface. A number of vendors offer prefabricated, modular infiltration galleries in a variety of material types, shapes and sizes.

Alternative terms: *Underground detention and infiltration system, infiltration gallery, exfiltration basin or trench*