Drought Response Outreach for Schools (DROPS)
LID Sizing Steps Revised 12/10/14

1. Determine Tool Input
    a. Design storm depth
        i. Download Basin Sizer: http://svctenvims.dot.ca.gov/wqpt/basinsizer.aspx
        ii. Select "Caltrans" tab and zoom to school location (see Figure 1)
        iii. Select nearest rain gauge and record design storm depth(see Figure 2)
    b. Soil hydraulic conductivity (infiltration rate)
        i. Use field data if available, or
        ii. Check with municipality for local soil survey, or
        iii. Use NRCS data (available in LID Sizing Tool – steps are provided below)
    c. Impervious Area
        i. Measure in field, or
        ii. Measure using LID Sizing Tool (steps are provided below)

2. Enter Input (see Figure 3)
    a. Go to LID Sizing Tool website: http://owp-web1.saclink.csus.edu/LIDTool/Start.aspx
    b. Select climate station (see Figure 4)
        i. Zoom to school location and select nearest climate station
        ii. (Don't worry too much about this – you will override the default results in a future step using the design storm depth from Step 1).
    c. Input soil conductivity (see Figure 5)
        i. Enter value from Step 1, or
        ii. Using LID Sizing Tool, zoom to school location and read off soil type
    d. Click "Submit" (see Figure 5)

3. Review the Areas Provided in the Table
    a. Skip "Site Design Measures" page – click next (see Figure 6)
    b. Override default design storm depth below table with depth determined from Step 1 (see Figure 7). Click "Submit"
    c. Read areas from "Design Storm" column (ignore other columns, see Figure 7)

4. Choose an LID BMP
    a. Click on area value under "Design Storm" column to review details on BMP of interest (see Figure 7)
    b. Review LID BMP details (see Figure 8)

5. Evaluate feasibility
    a. Some questions include:
        i. Do I have enough space?
        ii. Will utilities interfere?
        iii. Is the topography appropriate?
        iv. Do I have enough groundwater clearance?
        v. Can I commit to the maintenance?
    b. Tool provides some helpful resources for further evaluations (see Figure 9)

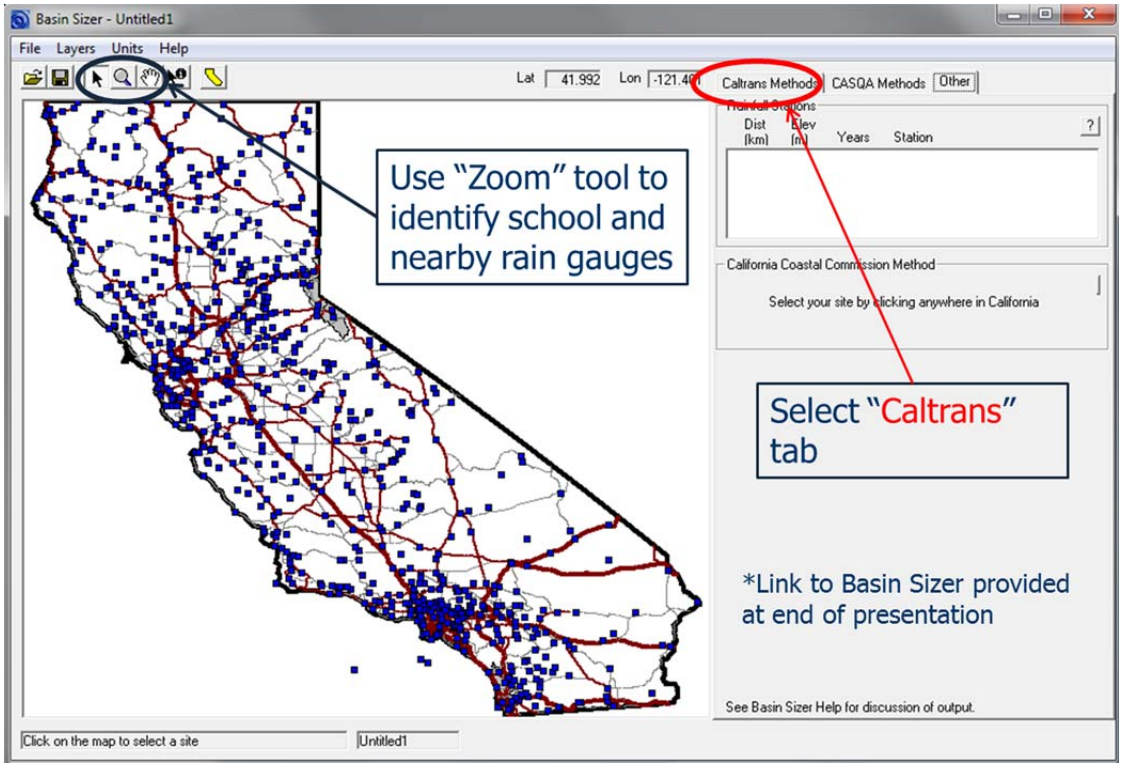


Figure 1. Basin Sizer – Select "Other" Tab and Zoom to School Location

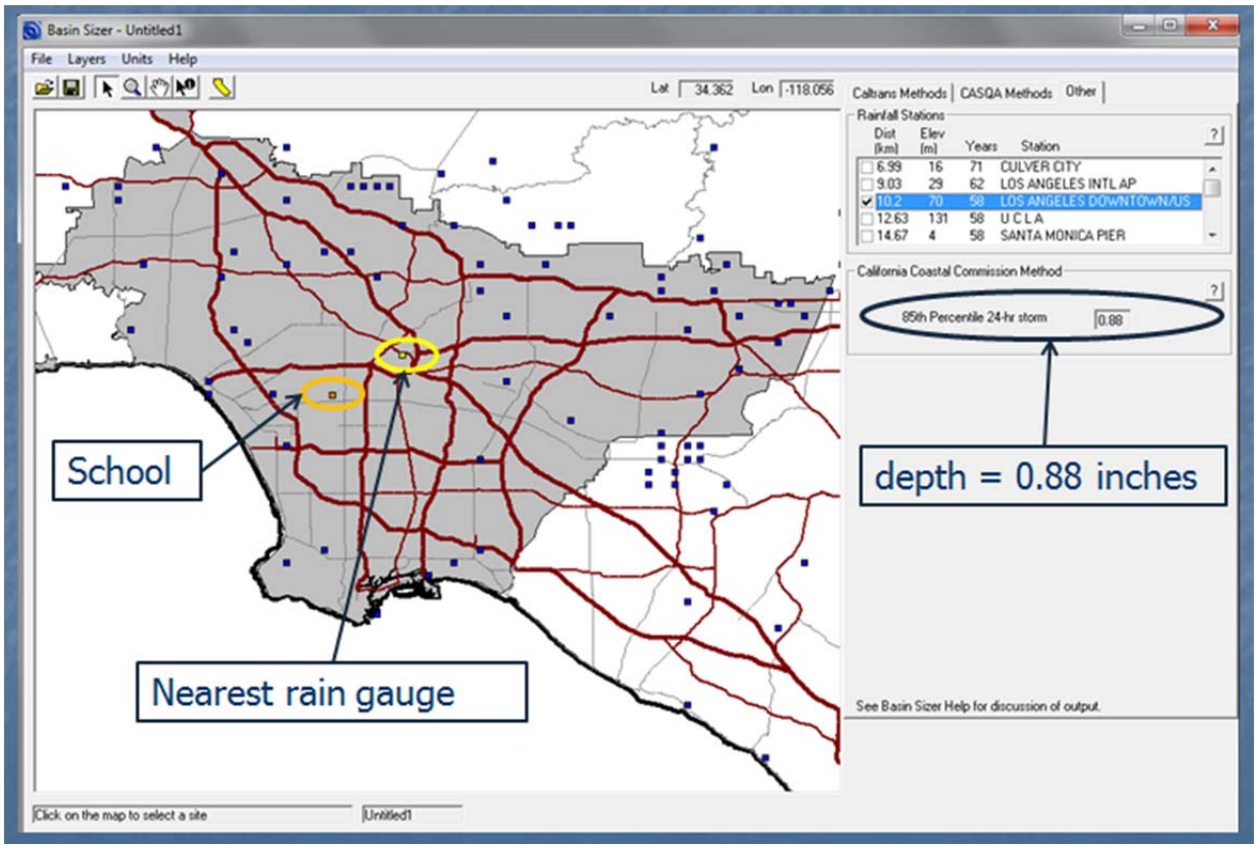


Figure 2. Basin Sizer – Select Nearest Rain Gauge and Record Design Storm Depth

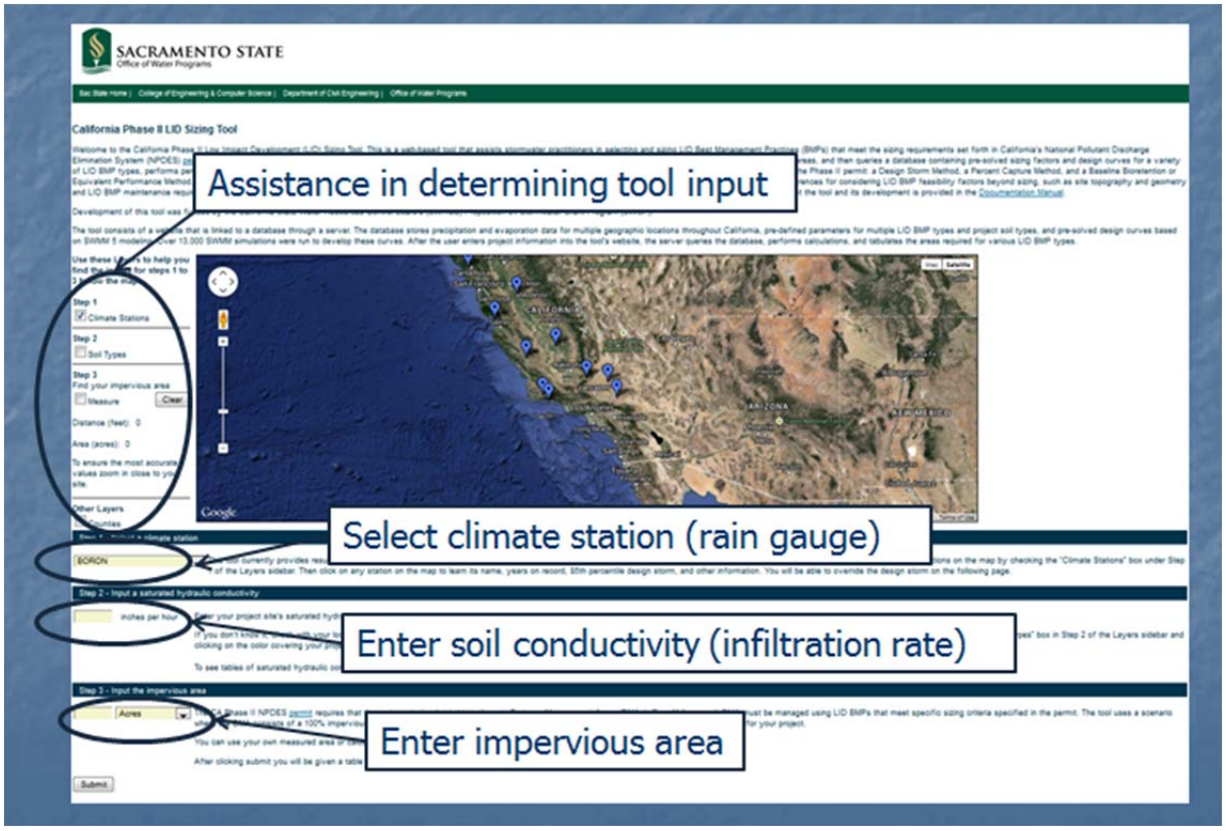


Figure 3. LID Sizing Tool – Enter Input

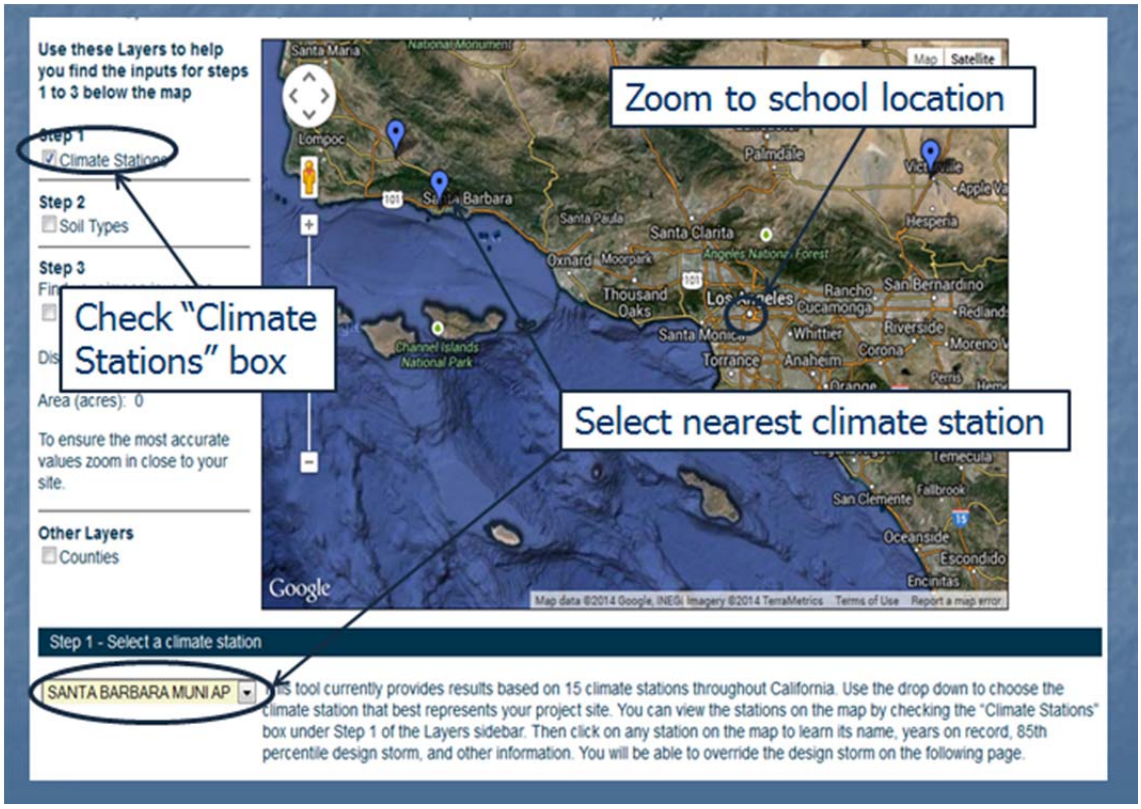


Figure 4. LID Sizing Tool – Zoom to School Location and Select Climate Station

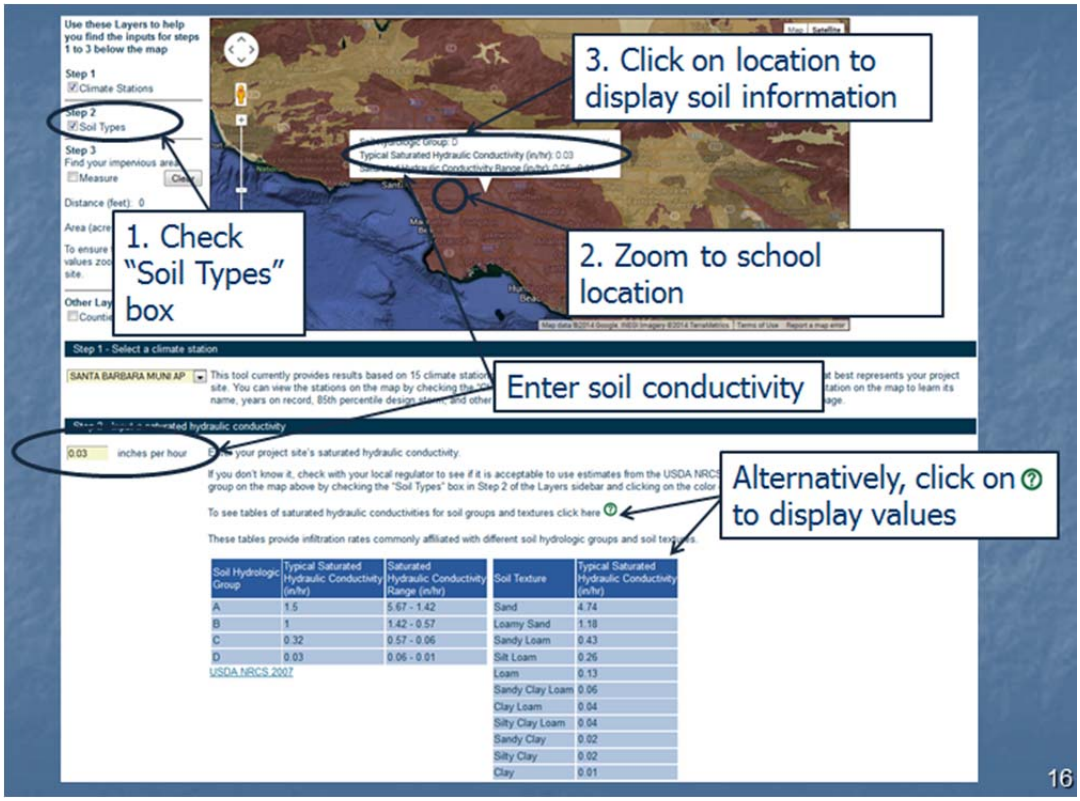


Figure 5. LID Sizing Tool – Zoom to School Location and Enter Soil Conductivity

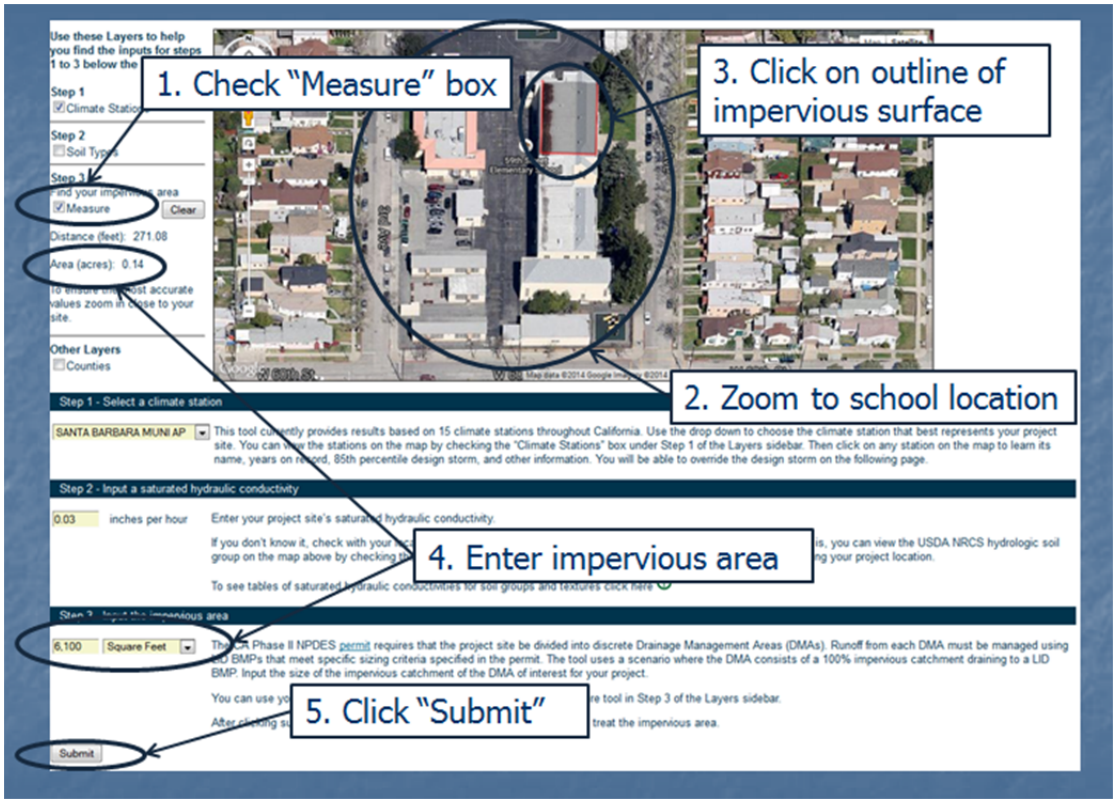
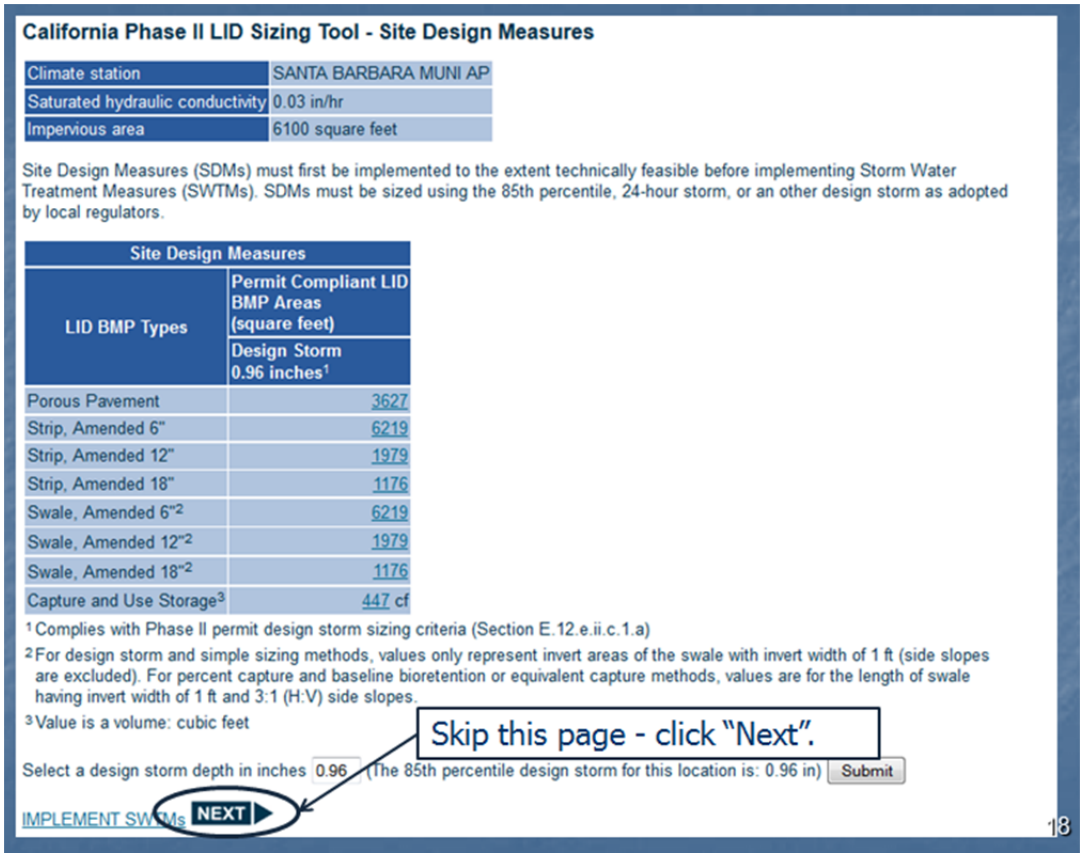


Figure 5. LID Sizing Tool – Zoom to School Location and Enter Impervious Area



California Phase II LID Sizing Tool - Site Design Measures

Climate station	SANTA BARBARA MUNI AP
Saturated hydraulic conductivity	0.03 in/hr
Impervious area	6100 square feet

Site Design Measures (SDMs) must first be implemented to the extent technically feasible before implementing Storm Water Treatment Measures (SWTMs). SDMs must be sized using the 85th percentile, 24-hour storm, or an other design storm as adopted by local regulators.

Site Design Measures	
LID BMP Types	Permit Compliant LID BMP Areas (square feet) Design Storm 0.96 inches[1]
Porous Pavement	3627
Strip, Amended 6"	6219
Strip, Amended 12"	1979
Strip, Amended 18"	1176
Swale, Amended 6"[2]	6219
Swale, Amended 12"[2]	1979
Swale, Amended 18"[2]	1176
Capture and Use Storage[3]	447 cf

[1] Complies with Phase II permit design storm sizing criteria (Section E.12.e.ii.c.1.a)
[2] For design storm and simple sizing methods, values only represent invert areas of the swale with invert width of 1 ft (side slopes are excluded). For percent capture and baseline bioretention or equivalent capture methods, values are for the length of swale having invert width of 1 ft and 3:1 (H:V) side slopes.
[3] Value is a volume: cubic feet

Skip this page - click "Next".

Select a design storm depth in inches 0.96 (The 85th percentile design storm for this location is: 0.96 in) Submit

IMPLEMENT SWTMs NEXT

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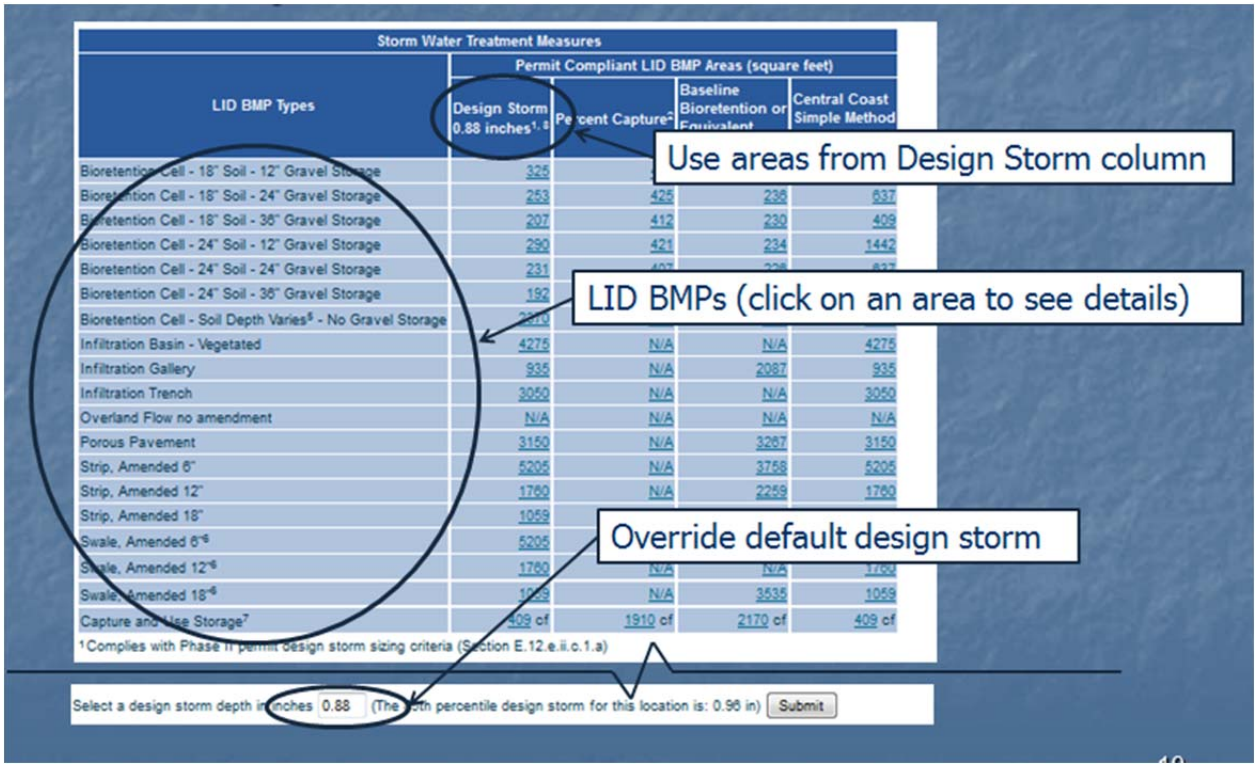
Figure 6. LID Sizing Tool – Skip Site Design Measures Page



Storm Water Treatment Measures				
LID BMP Types	Permit Compliant LID BMP Areas (square feet)			
	Design Storm 0.88 inches[1, 8]	Percent Capture[2]	Baseline Bioretention or Equivalent	Central Coast Simple Method
Bioretention Cell - 18" Soil - 12" Gravel Storage	325	[illegible]	[illegible]	[illegible]
Bioretention Cell - 18" Soil - 24" Gravel Storage	253	425	236	637
Bioretention Cell - 18" Soil - 36" Gravel Storage	207	412	230	409
Bioretention Cell - 24" Soil - 12" Gravel Storage	290	421	234	1442
Bioretention Cell - 24" Soil - 24" Gravel Storage	231	[illegible]	[illegible]	[illegible]
Bioretention Cell - 24" Soil - 36" Gravel Storage	192	[illegible]	[illegible]	[illegible]
Bioretention Cell - Soil Depth Varies[5] - No Gravel Storage	[illegible]	[illegible]	[illegible]	[illegible]
Infiltration Basin - Vegetated	4275	N/A	N/A	4275
Infiltration Gallery	935	N/A	2087	935
Infiltration Trench	3050	N/A	N/A	3050
Overland Flow no amendment	N/A	N/A	N/A	N/A
Porous Pavement	3150	N/A	3267	3150
Strip, Amended 6"	5205	N/A	3758	5205
Strip, Amended 12"	1760	N/A	2259	1760
Strip, Amended 18"	1059	[illegible]	[illegible]	[illegible]
Swale, Amended 6"[6]	5205	[illegible]	[illegible]	[illegible]
Swale, Amended 12"[6]	1760	N/A	N/A	1760
Swale, Amended 18"[6]	1059	N/A	3535	1059
Capture and Use Storage[7]	409 cf	1910 cf	2170 cf	409 cf

[1] Complies with Phase II permit design storm sizing criteria (Section E.12.e.ii.c.1.a)

Use areas from Design Storm column

LID BMPs (click on an area to see details)

Override default design storm

Select a design storm depth in inches 0.88 (The 85th percentile design storm for this location is: 0.96 in) Submit

Figure 7. LID Sizing Tool – Review Area Table

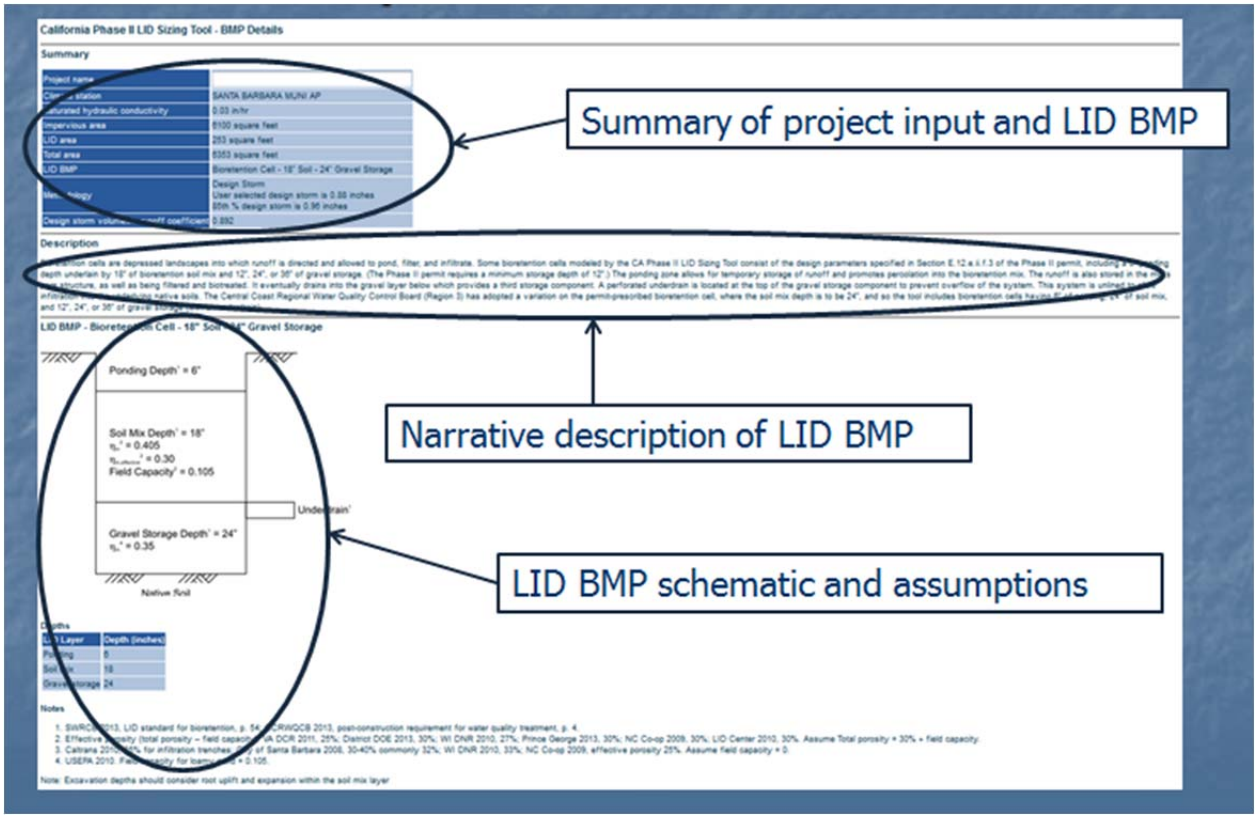


Figure 8. LID Sizing Tool – Review LID BMP Details

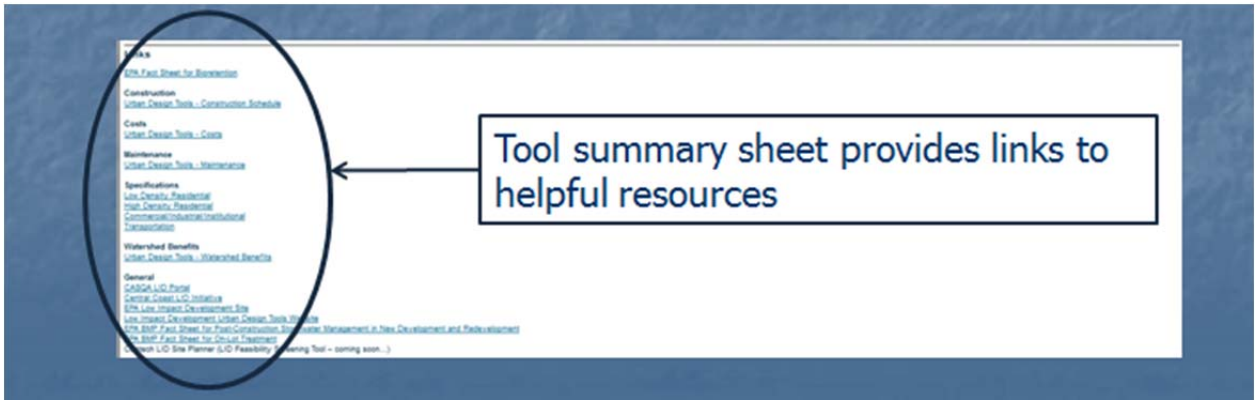


Figure 8. LID Sizing Tool – Evaluate Feasibility