**Specific BMPs**

* Create a new file and enter a zip code, say “no’ for Construction SW permit, enter 1 acre of impervious, and 1 acre of turf B soil
* As we cover each of the following BMPs, drag and drop the BMP onto the screen and open it. Input 1 acre of impervious and 1 acre turf on B soil. Once we are done with the BMP, delete it from the Schematic tab.

1. Bioretention with underdrain – base scenario
   1. No to underdrain and liner
   2. 1000 ft2 for all the areas
   3. Overflow = 1 ft
   4. Media = 2 ft
   5. 0.11 and 0.25 for the two porosity terms
   6. No to tree
   7. Media mix A
   8. No to P content of less than 30ppm
   9. No to amendment
   10. B soil (0.45 in/hr)
   11. 48 hr drawdown

|  |  |  |  |
| --- | --- | --- | --- |
| **Scenario** | **Volume retained (ac-ft)** | **PP retained (lbs)** | **DP retained (lbs)** |
| Base scenario |  |  |  |
| Raise underdrain 0.8 feet |  |  |  |
| Add a tree |  |  |  |
| Mix C |  |  |  |
| Yes to amendment |  |  |  |

1. Permeable pavement
   1. Surface area must be at least 8712 ft2; can’t exceed 43560 ft2
   2. Enter same area for bottom
   3. Enter 1.8 depth
   4. No to compaction
   5. B soil (0.45 in/hr)
   6. Drawdown = 48
   7. Change compaction to yes
   8. Try depth of 0 (underdrain at bottom)
2. Rainwater harvest
   1. 25,000 gallon tank = 3342 ft3. A 5000 ft2 pond with 3 feet of drawdown for irrigation stores 150,000 ft3. Ponds, if space allows, provide almost unlimited water for irrigation.
   2. Base scenario
      1. Storage volume = 5000 ft3
      2. Application area = 1 acre
      3. No to defined weekly rate
      4. B soil
      5. Turf
      6. May-September
      7. Yes to offline
      8. No to on-site

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| --- | --- |
| **Scenario** | **Volume retained (ac-ft)** |
| Base scenario |  |
| 2 acre application area |  |
| Yes – 1 in/week application |  |
| Trees instead of turf |  |
| April-October |  |
| No to offline |  |
| 100 ft3 for non-irrigation |  |

1. Tree trench with underdrain – base scenario
   1. No to underdrain and liner
   2. 1000 ft2 for all the areas
   3. 3 for media depth
   4. 0.11 and 0.25 for porosities
   5. Tree type – deciduous
   6. Tree size – large
   7. Number of trees – 2
   8. Mix A
   9. No to P content
   10. No to amendment
   11. B soil (0.45 in/hr)
   12. 48 hr drawdown

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| --- | --- | --- | --- |
| **Scenario** | **Volume retained (ac-ft)** | **PP retained (lbs)** | **DP retained (lbs)** |
| Base scenario |  |  |  |
| Coniferous tree |  |  |  |
| Go to 3 trees (ignore warning) |  |  |  |
| Mix D |  |  |  |
| Yes to amendment |  |  |  |

1. Green roof
   1. Media depth – 3 inches
   2. Media surface area – 22,000 ft2
   3. Increase media depth to 4 inches
   4. Increase surface area to 30,000 ft2
2. Disconnection BMP
   1. Redirected impervious – 43560 ft2
   2. Effective pervious – 43560 ft2
   3. B soil
   4. Modify the values and observe changes in volume retention
3. Swales – although side slope and swale main channel are separate icons, treat them as a single system. Therefore can only have impervious acreage going to one or the other (otherwise you are double counting).
   1. Base scenario – side slope
      1. 1 acre of impervious and 1 acre of pervious turf on B soil
      2. Route to swale main channel
      3. Side slope 5:1
      4. Flow path – 10 feet
      5. Channel length – 300 feet
      6. B soil (0.45 in/hr)
      7. Mowed turf
   2. Base scenario – swale main channel
      1. No acreages
      2. 300 foot channel, 5 feet wide, 2% slope
      3. B soil (0.45 in/hr)
      4. Mowed turf

|  |  |
| --- | --- |
| **Scenario** | **Volume retained (ac-ft)** |
| Base scenario | 0.329 |
| 600 foot length | 0.6525 |
| Native grass | 0.6833 |
| Impermeable check dam (5 feet wide, 1 foot deep, 48 hour drawdown) | 1.0249 |
| Add another check dam | 1.2839 |
| Increase check dam depth to 1.8 feet | 1.9988 |

1. Underground infiltration
   1. On BMP parameters tab, click on the link to calculations, then click on link to Excel file near the top