Chapter

4

Site Design Measures

This Chapter explains how low impact development (LID) site design measures can reduce the size of your project's stormwater treatment measures.

Site design measures for water quality protection are low impact development (LID) techniques employed in the design of a project site in order to reduce the project's impact on water quality and beneficial uses. Including site design measures in a project can help reduce the size of treatment measures (see Section 4.1). Site design measures can be grouped into two categories:

- Site design measures that ***preserve habitat and open space***, and
- Site design measures that ***reduce impervious surfaces*** in a project.

This chapter emphasizes site design measures that reduce impervious surfaces, which can reduce the amount of stormwater runoff that will require treatment. This translates into smaller facilities to meet stormwater treatment requirements than would have been needed without the site design measures. Site design measures are also important in minimizing the size of any required hydromodification management measures for the site. A wide variety of site design measures can be incorporated in your project, including:

- Design ***self-treating*** areas and ***self-retaining*** areas.
- ***Reduce the size of impervious features*** in the project.
- Use cisterns or rain barrels to ***store rainwater*** onsite.
- ***Preserve and plant trees***.
- ***Avoid compaction*** of soils in areas of the site that will not have structures.

> Site design measures used to reduce the size of stormwater treatment measures ***must not be removed*** from the project without a corresponding resizing of the stormwater treatment measures.

Where landscaped areas are designed to have a stormwater drainage function, they need to be carefully integrated with other landscaping features on the site early in project design. This may require coordinating separate designs prepared by different professionals.

Remember that any site design measures (including self-treating areas) used to reduce the size of stormwater treatment measures ***must not be removed*** from the project without a corresponding resizing of the stormwater treatment measures. For this reason, municipalities may require you to include site design measures in the maintenance agreement or maintenance plan for stormwater treatment measures, or otherwise record them with the deed. Depending on the municipality, site design measures may be subject to periodic operation and maintenance inspections. Check with the municipal staff regarding the local requirements.

4.1 Using Self-Treating Areas

Some portions of your site may provide "self-treatment" if properly designed and drained. Such areas may include conserved natural spaces, landscaped areas (such as parks and lawns), green roofs, and areas paved with turf block. These areas are considered "self-treating" because ***infiltration and natural processes that occur in these areas prevent stormwater and pollutants from being discharged.*** Areas of pervious pavement – such as pervious concrete, pervious asphalt, or permeable interlocking concrete pavers – and artificial turf may function as self-treating areas if they are designed to store and infiltrate (into native soil) the runoff volume described in Provision C.3.d of the MRP. Technical guidance for green roofs, pervious pavement, and grid pavements is provided in Chapter 6.

> If self-treating areas do not receive runoff from impervious areas, runoff from self-treating areas may discharge ***directly*** to the storm drain.

As long as the self-treating areas do not receive runoff from other impervious areas on the site, your drainage design may route the runoff from self-treating areas directly to the storm drain system or other receiving water. In this way, the stormwater from the self-treating areas is kept separate from the runoff from paved and roofed areas of the site and does not require treatment.

If runoff from a self-treating area co-mingles with the C.3.d amount of runoff from impervious surfaces, then your stormwater treatment measure must be hydraulically sized to treat runoff from both the self-treating area and the impervious areas. This does not apply to the high flows of stormwater that are in excess of the C.3.d amount of runoff, because stormwater treatment measures are not designed to treat these high flows. If your project requires hydromodification management, then the runoff from self-treating areas <u>will</u> need to be included in the sizing calculations for HM treatment measures.

Figure 4-1 compares the size of the stormwater treatment measure that would be required to treat the runoff from a site, depending on whether or not the runoff from a self-treating area discharges directly to the storm drain system or other receiving water. In the first (upper) sequence, runoff from the self-treating area is directed to the stormwater treatment measure. In the second (lower) sequence, runoff from the self-treating area bypasses the treatment measure and flows directly to the storm drain system or other receiving water, resulting in a smaller volume of stormwater that will require treatment.

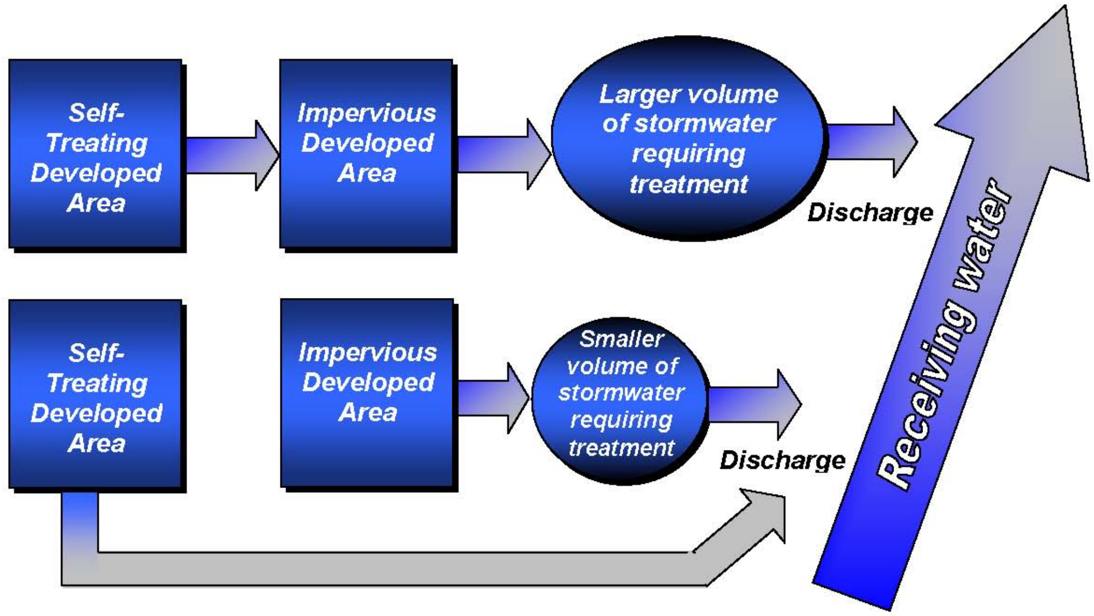

Figure 4-1: Self-Treating Area Usage (Source, BASMAA, 2003)

Figure 4-2 compares the conventional drainage approach to the self-treating area approach. The conventional approach combines stormwater runoff from landscaped areas with the runoff from impervious surfaces. Assuming the parking lot storm drain leads to a treatment measure, in the conventional approach, the treatment measure will need to be sized to treat runoff from the entire site. The ***self-treating area approach*** routes runoff from the landscaped areas directly to the storm drain system. In this approach, the treatment measure is sized to treat only the runoff from impervious areas.

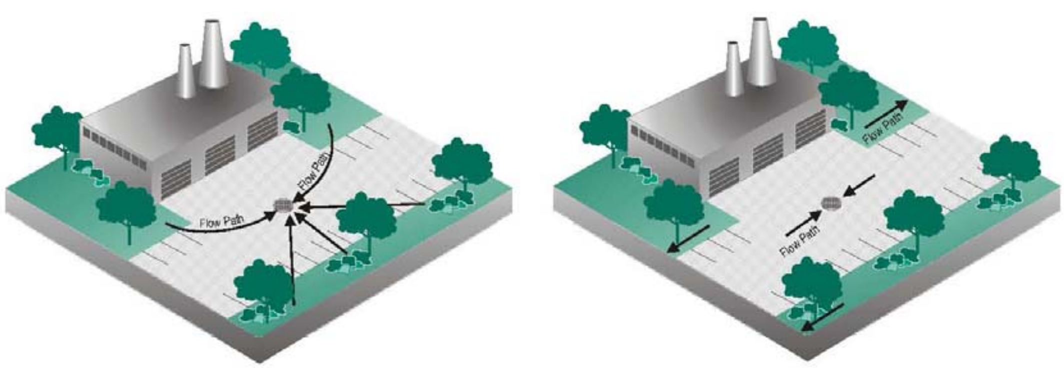

Figure 4-2: Conventional Site Compared to Same Site with Self-Treating Areas (Source, BASMAA 2003)

Figure 4-3 shows an example site in which the runoff from impervious areas must flow to the stormwater treatment measure before discharging to the storm drain, while runoff from the self-treating area may discharge directly to the storm drain. This is allowable because the self-treating area does not accept runoff from the impervious portions of the site.

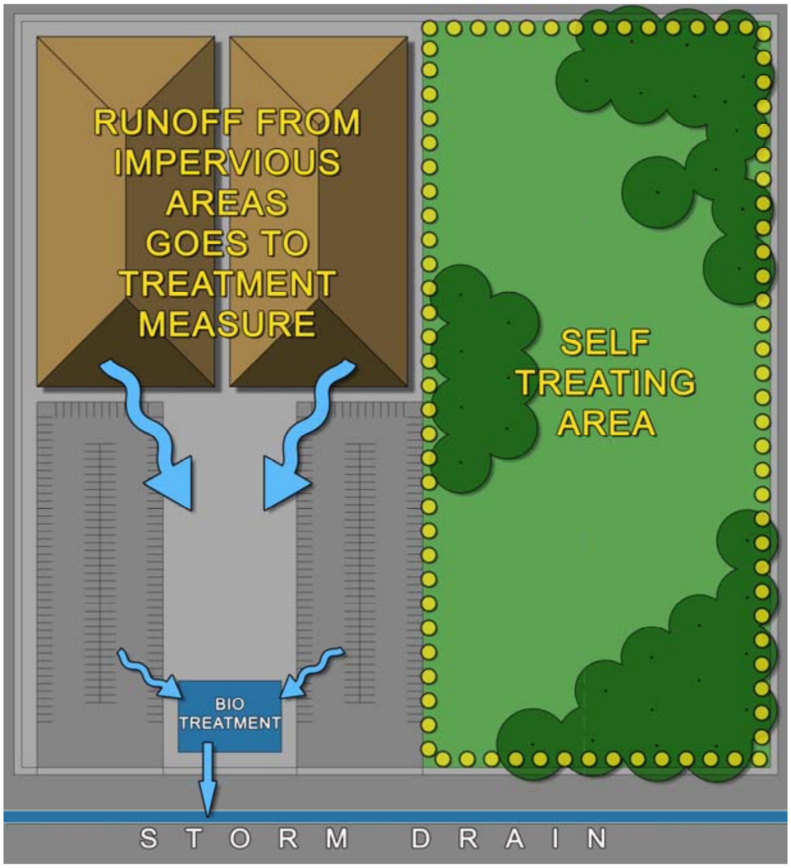

Figure 4-3: Schematic Diagram of a Site with a Self-Treating Area

4.2 Self-Retaining Areas

In “self-retaining areas”, also known as “zero discharge areas,” a portion of the amount of stormwater runoff that is required to be treated is infiltrated or retained in depressed landscaped areas. If it is possible to create a self-retaining area on your site, you can design smaller stormwater treatment measures (as illustrated in Figure 4-4). ***Drainage from roofs and paving can be directed to the self-retaining area***, where it can pond and infiltrate into the soil. Self-retaining areas may be created by designing concave landscaped areas at a lower elevation than surrounding paved areas, such as walkways, driveways, sidewalks and plazas (as illustrated in Figure 4-5). The following design considerations apply to self-retaining areas:

- Landscaped self-retaining areas are designed as concave areas that will retain the first one-inch of rainfall without producing any runoff (although self-retaining areas do not need to be hydraulically sized like a treatment measure, one inch depth roughly corresponds to the C.3.d. volume of runoff).
- Pervious paving designed as a self-retaining area must provide adequate storage in the void space of the gravel base layer to accommodate the volume of runoff specified in Provision C.3.d of the MRP for both the area of pervious paving and the impervious

surfaces that contribute runoff. The area must allow for infiltration of water and not be lined with impervious materials or constructed over an impervious barrier.

- Artificial turf (e.g., sports fields) designed as a self-retaining area must provide adequate storage in the void space of the gravel base layer to accommodate the volume of runoff specified in Provision C.3.d of the MRP for both the area of artificial turf and the impervious surfaces that contribute runoff. The area must allow for infiltration of water and not be lined with impervious materials or constructed over an impervious barrier.
- Runoff may enter the self-retaining area as sheet flow, or it may be piped from a roof or area of impervious pavement. The elevation difference between a landscaped self-retaining area and adjacent areas should be sufficient to allow build-up of turf or mulch within the self-retaining area.
- The self-retaining area must drain completely within 5 days under saturated conditions.
- A ***maximum 2:1 ratio of impervious area to the receiving pervious area*** is acceptable, where the pervious area can pond up to 3 inches in depth (i.e., 1 inch of depth on the pervious area plus 1 inch from each of the 2 units of impervious area). The 2:1 ratio applies to landscaped areas, pervious paving, and artificial turf areas that are designed as self-retaining areas.
- Drainage from self-retaining areas (for amounts of runoff greater than the first one-inch) must flow to off-site streets or storm drains without flowing onto paved areas within the site.
- If overflow drains or inlets to the storm drain system are installed within a landscaped self-retaining area, set them at an elevation of at least 3 inches above the low point to allow ponding. The overflow drain or storm drain inlet elevation should be high enough to allow ponding throughout the entire surface of the self-retaining area.
- Any impervious pavement within the self-retaining area (e.g., a sidewalk through a landscaped area) cannot exceed 5 percent of the total self-retaining area.
- The municipality may require amended soils, vegetation and irrigation in the self-retaining area to maintain soil stability and permeability. However, special biotreatment soils are not required.
- Self-retaining areas should be protected from construction traffic and compaction.

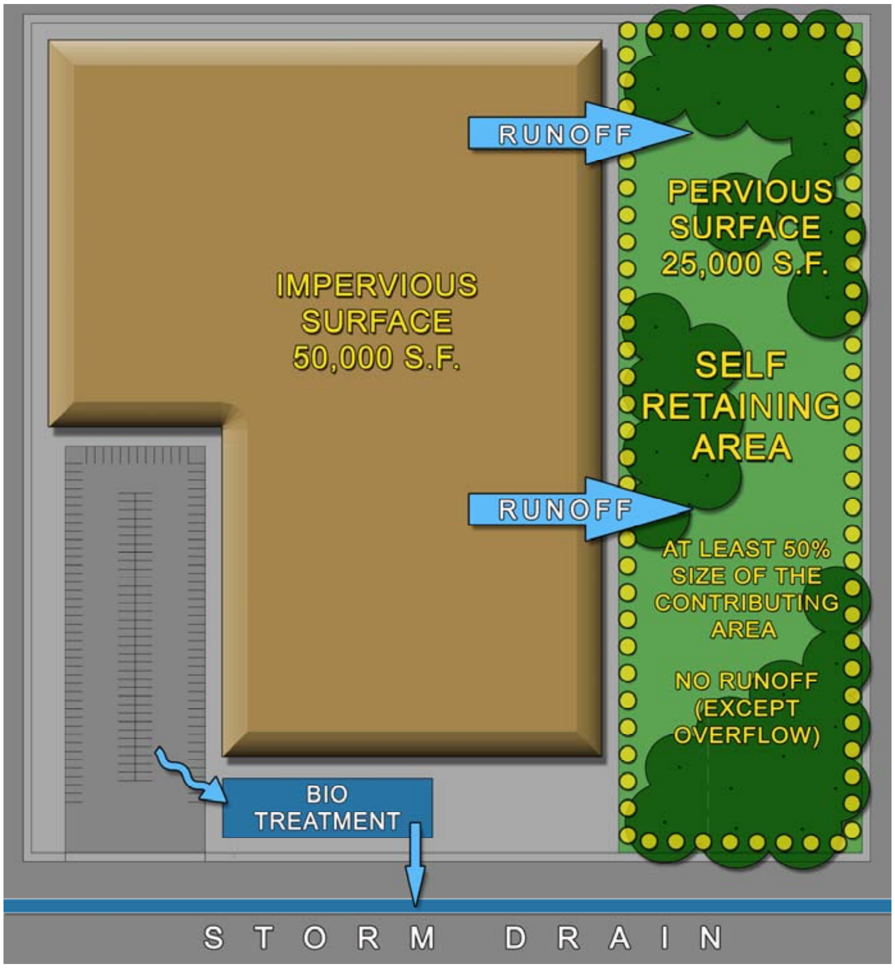

Figure 4-4: Schematic Drainage Plan for Site with a Self-Retaining Area

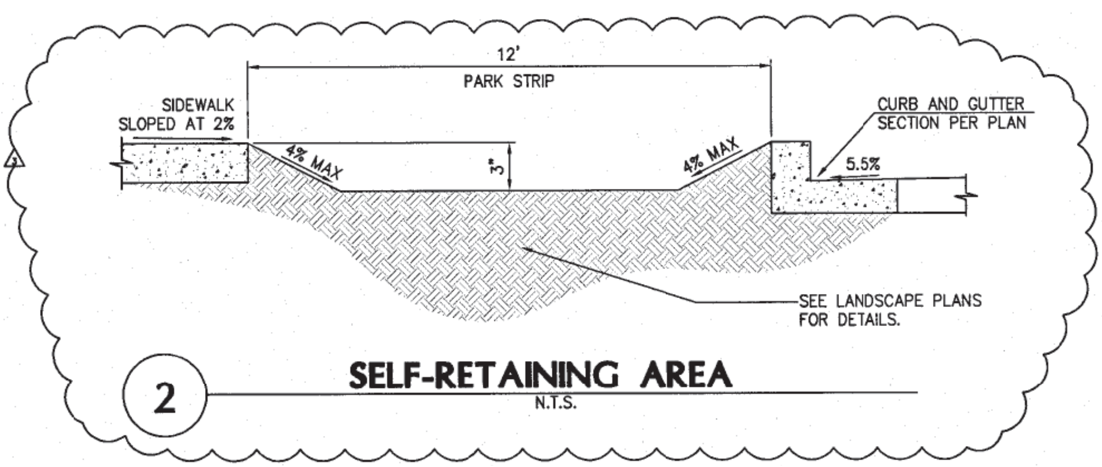

Figure 4-5: Example Self-Retaining Landscaped Area Cross Section

4.3 Reducing the Size of Impervious Areas

A variety of project features can be designed so that they result in a smaller "footprint" of impervious surface. These techniques generally need to be incorporated very early in the project design. A number of techniques for reducing impervious surfaces are described below.

4.3.1 Convert Impervious to Pervious

Consider replacing planned impervious areas with ***pervious pavement*** – such as pervious concrete, porous asphalt, interlocking concrete pavers, or grid pavements – which is not considered "impervious" if designed to store and infiltrate the rainfall runoff volume described in Provision C.3.d of the MRP. Artificial turf is also considered a pervious area if designed to store and infiltrate the C.3.d amount of runoff. These areas are classified as self-treating areas and ***do not need to be counted as impervious area*** for the purpose of applying the C.3 size thresholds (i.e., determining whether your project is a Regulated Project). Green roofs are another site design measure that can be considered a self-treating area and subtracted from the impervious surface calculation. See Chapter 6 for technical guidance on pervious paving and green roofs.

Figure 4-6: Pervious paving at Mayfield Soccer Field in Palo Alto.

4.3.2 Use Alternative Site Layout Techniques

Check with your local jurisdiction regarding its policies regarding the following site design measures:

- Reduce building footprints by using compact, ***multi-story structures,*** as allowed by local zoning regulations.
- ***Cluster buildings*** to reduce the length of streets and driveways, minimize land disturbance, and protect natural areas.
- *Design* ***narrow streets*** and driveways, as allowed by the local jurisdiction.
- *Use* ***sidewalks on only one side*** of the street may be appropriate in areas with little pedestrian and vehicular traffic, as allowed by the local jurisdiction.

4.3.3 Minimize Surface Parking Areas

A variety of techniques can be used to minimize surface parking areas, in terms of the number and size of parking spaces, as allowed by the local jurisdiction. These solutions focus on either reducing the demand for parking, maximizing the efficiency of parking utilization, or implementing design solutions to reduce the amount of impervious surface per parking space.

- ***Structured parking*** can be an efficient way to reduce the amount of impervious surface needed for parking. Structured parking can be integrated with usable space in buildings that also house offices, residential units or ground-floor retail, or can be built underground.
- Maximize efficiency of parking utilization with ***shared parking*** that serves different land uses that have different times of peak demand. For example, an office use with demand peaks during the day can share parking with restaurants, where demand is greatest during the evening, and to some extent residential uses, where demand peaks are in the evenings, nights and on weekends.
- Reduce parking demand by ***separating the cost of parking*** from the cost of housing or leasable space. This allows the buyer or tenant to choose how much parking they actually need and are willing to pay for.
- ***Parking lifts*** are another way to reduce the amount of impervious surface needed for parking. A parking lift stacks two to three cars using a mechanical lift for each surface space. They can be operated manually by residents or employees, or by a valet or parking attendant. With proper training for users, this strategy can be a practical way to double or triple the parking capacity given a set amount of land.

Figure 4-7: Parking Lifts in Parking Garage, Berkeley

- Another way to maximize the efficient use of parking area is ***valet parking***, where attendants park cars much closer than individual drivers would in the same amount of parking space.

4.4 Rainwater Harvesting and Use

Rainwater harvesting systems are water storage systems that ***collect rainwater from roofs*** and other impervious building surfaces, and store it so it may be used for irrigation and other non-potable uses. Rainwater from a building's gutters and downspouts is conveyed to storage vessels, such as ***rain barrels*** or above- or below-ground ***cisterns***. For rainwater to serve as a useful irrigation supply in the Bay Area, it may need to be stored until dry periods, requiring more storage capacity. As allowed by the local jurisdiction, harvested rainwater may be also used for toilet flushing, industrial processes, car washing, washing machines, and swimming pools (if chlorinated).

Water storage systems in proximity to the building may be subject to approval by the building official. The use of waterproofing as defined in the building code may be required for some systems, and the municipality may require periodic inspection. Check with municipal staff for local requirements. Also review the 2013 California Plumbing Code adopted January 1, 2014, which includes rainwater harvesting regulations (see Chapter 17). Section 6.6 of this Handbook contains more detail on the 2013 Plumbing Code.

Water storage systems should include ***preventive measures for pollutants and mosquito control***. The initial rainfall of any storm often picks up the most pollutants from dust, bird droppings and other particles that accumulate on the roof surface between rain events. ***If rainwater is used for drip irrigation,*** a diverter device may be needed to separate the dirtier, early rainfall (which is likely to contain solids that could clog the drip system) and divert it so that it does not mix with the cleaner runoff that follows. Through a simple valve design, a "roof washer" diverts the first 0.02 inches of rainfall per 24-hour period per square foot of roof area away from the rainwater harvesting storage tanks or cisterns. Water diverted by a roof washer may be routed to a landscaped area large enough to accommodate the volume, or a hydraulically-sized treatment measure. Roof washers should be installed in such a way that they will be easily accessible for regular maintenance. Also, water storage facilities must be equipped with tightly sealed covers and screens at all flow entry points to reduce mosquito-breeding risk.

Although many types of roofing materials may contribute pollutants to harvested water, ***certain roofing materials have particular concerns***. Water harvested from roofs with wood shingles or shakes may be suitable for irrigating ornamental landscaping only, due to the leaching of fire-proofing compounds. In addition, food-producing gardens should not be watered with rainwater from roofs with asphalt composite shingles, tar, lead, or other materials that may adversely affect food for human consumption.

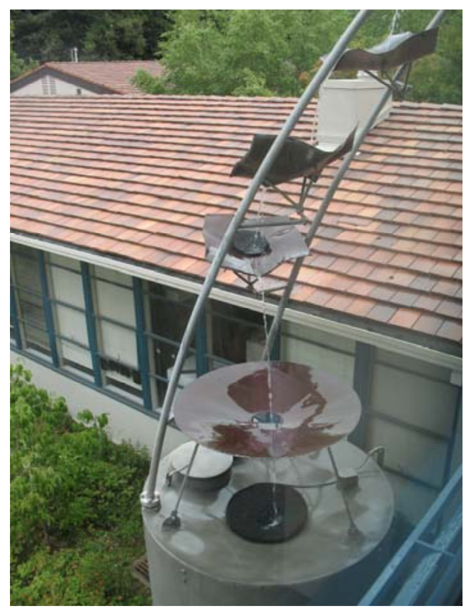

Figure 4-8: Rainwater is collected and used for flushing toilets at Mills College, Oakland.

Technical guidance for rainwater harvesting and use is provided in Chapter 6. A rainwater harvesting system is considered a stormwater treatment measure if it is designed to capture and use the full amount of runoff that is required to be treated per Provision C.3.d of the MRP (i.e. the "water quality design volume"). A rainwater harvesting system is considered a site design measure if it is designed to capture and use less than the water quality design volume and overflow into a landscaped area, or if the captured water cannot be used prior to the next rain event.

Meeting Stormwater Treatment Requirements with Harvesting and Use

If rainwater harvesting systems are used to meet the MRP stormwater treatment requirements, they must be designed to handle back-to-back storms. In the event that the cistern or other water storage unit were full when a storm occurred, any water released from the cistern would need to be treated before discharging to storm drain system. To avoid the redundancy of installing both a rainwater harvesting system and treatment measures for treating overflows from the system, rainwater harvesting systems intended to meet stormwater treatment requirements should ***achieve one of the following three objectives:***

- ***Use the full water quality design volume of runoff for irrigation.*** In order to capture and use the full design volume for irrigation use, the following conditions must be met: (a) there must be sufficient irrigation demand for the design volume on or near the project during the wet season, or (b) it must be feasible to store the amount of the rainwater that is harvested during the wet season (October through April) until it is used for irrigation (primarily May through September, although some irrigation may occur during wet season months).
- ***Use the full water quality design volume of runoff for non-irrigation purposes.*** In order to harvest and use the full design volume for non-irrigation uses, the following conditions must be met: (a) there must be a reliable non-potable demand for the harvested rainwater during the wet season, and (b) the cistern or other water storage unit must be designed with sufficient volume to accommodate consecutive storms without discharging any of the required treatment volume to the storm drain system.
- ***Use the full water quality design volume of runoff from only a portion of the site.*** It may be possible to divide your site into drainage areas and store and use rainwater from only one drainage area, such as a rooftop or portion of a rooftop. As in the first two scenarios, the full design volume would need to be used for either irrigation or non-irrigation purposes, but in this case it would be the design volume of runoff from one drainage area, which would allow for a smaller cistern.

Procedures for determining the feasibility of meeting stormwater treatment requirements with rainwater harvesting and use, including sizing curves for cisterns, are provided in Appendix I.

4.5 Tree Preservation and Planting

Trees perform a variety of functions that reduce runoff volumes and improve water quality. Leaf canopies intercept and hold rainwater on the leaf surface, preventing it from reaching the ground and becoming runoff. Root systems create voids in the soil that facilitate infiltration. Trees also absorb and transpire large quantities of groundwater, making the soil less saturated, which allows more stormwater to infiltrate. Through the absorption process, trees remove pollutants from stormwater and stabilize them. Finally, tree canopies shade and cool paved areas. Recent regional and State documents[1] recognize the benefits of trees in controlling stormwater and allow applicants to take credit

Figure 4-9: Pruneridge Towers, Campbell (Source: Dave Docktor, City of Palo Alto)

[1] BASMAA LID Feasibility Report, 2011; State Construction General Permit, Appendix 2, 2009; Stormwater Quality Design Manual for the Sacramento and South Placer Regions, 2007.

towards meeting stormwater treatment requirements by planting new trees and preserving existing trees on the project site.

4.5.1 Interceptor Tree Credits

Consistent with the Feasibility Report submitted to the Water Board by BASMAA on May 1, 2011, a project may earn "interceptor tree credits" by planting new trees and preserving existing trees, according to the schedule in Table 4-1. The interceptor tree credits can be subtracted from the amount of impervious surface area requiring treatment. If the tree is located near existing impervious surface on the site that is not being redeveloped, that area of impervious surface can be considered treated in lieu of an equivalent amount of impervious surface being created or replaced on another part of the site. Interceptor tree credits are especially helpful for addressing small, hard to treat impervious areas such as driveway cuts.

To be eligible for these credits, the trees need to meet the minimum requirements listed in Section 4.5.2. Guidance for planting and protection during construction is provided in Section 4.5.3. Additional information about planting trees in dense, urban settings is provided in Section 4.5.4.

Table 4-1
Stormwater Treatment Credits for Interceptor Trees

	New Evergreen Trees	New Deciduous Trees	Existing Trees
Credits for new and existing trees that meet minimum interceptor tree requirements	200 square feet	100 square feet	Square footage under the tree canopy for trees with an average DBH of 12 inches or more.

*DBH: Diameter at breast height (4.5 feet above grade).

Source: BASMAA LID Feasibility Criteria Report, 2011, (based on the tree credit system in the State Construction General Permit standards for post-construction stormwater control (CGP Appendix 2)).

4.5.2 Minimum Requirements for Interceptor Trees

The following requirements are based on guidance in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions and the State of Minnesota's Stormwater Manual.

<u>Planting New Interceptor Trees</u>

To be eligible for stormwater interceptor tree credits, trees planted as part of the project must meet the following minimum requirements:

- Plant tree within 25 feet of ground-level impervious surface;

- Maintain appropriate distance from infrastructure and other structures that could be damaged by roots; avoid overhead power lines, underground utilities, septic systems, sidewalks, curbs, patios, etc.
- Space trees so crowns do not overlap at 15 years of growth;
- Specified trees must be minimum 15-gallon container size at planting;
- Dwarf species are not acceptable; native species and trees with a large canopy at maturity are preferred.
- Clearly label on project plans the trees designated for stormwater interceptor tree credits.
- Provide adequate rootable soil volume (uncompacted planting soil around the tree) for each tree. Recommended volumes are 300, 600 or 900 cubic feet per tree depending on the size of the tree at maturity (small, medium or large respectively) or per municipality direction/specification.

Preserving Existing Trees

To be eligible for stormwater interceptor tree credits, existing trees preserved at the project site must meet the following minimum requirements:

- The tree trunk must be located within 25 feet of ground-level impervious surface that is included in the calculation of the amount of stormwater runoff that will require treatment.
- Dwarf species are ineligible.
- Clearly label on project plans the trees designated for stormwater interceptor tree credits.
- Protect existing soil from compaction around existing trees and provide additional rootable soil volume (uncompacted planting soil around the tree) for each tree where feasible. Recommended volumes are 300, 600 or 900 cubic feet per tree depending on the size of the tree at maturity (small, medium or large respectively) or per municipality direction/specification. If impervious surfaces are being removed adjacent to existing trees, uncompact the soil and protect for tree root growth. If impervious surfaces are being replaced or installed adjacent to existing trees, use strategies to provide uncompacted soil volume, such as modular suspended pavement systems or structural soil, if possible.

4.5.3 Interceptor Tree Planting and Construction Guidelines

The following guidelines are based on guidance in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions and the State of Minnesota's Stormwater Manual.

Planting New Interceptor Trees

- Drainage and soil type must support selected tree species.
- Avoid compaction of soil in planting areas.
- Avoid contamination of planting areas by construction related materials such as lime or limestone gravel.
- Install turf grass no closer than 24 inches from trunk;
- Add 4-6 inches deep of hardwood mulch, 6 inches away from trunk;

- Permanent irrigation system may be required;
- Avoid excess irrigation due to mosquito issues;
- Pruning and removal and replacement of diseased/damaged tree may be required.
- If construction is ongoing, install high-visibility protective fencing at the outer limit of the critical root zone area.
- Provide recommended minimum rootable soil volumes. See Section 4.5.2 above).

Preserving Existing Trees

- Plan new landscaping under existing trees to avoid grade changes and excess moisture in the trunk area, depending on the tree species. Preserve existing plants that are compatible with irrigation requirements and are consistent with the landscape design.
- Avoid grade changes greater than 6 inches within the critical root zone.
- Avoid soil compaction under trees.
- During construction minimize disruption of the root system.
- Plans and specifications shall clearly state protection procedures for interceptor trees to be preserved.
- Protect existing trees during construction through the use of high-visibility construction fencing at the outer limit of the critical root zone area. The fence must prevent equipment traffic and storage under trees. Excavation in this area should be done by hand and roots ½-inch and larger should be preserved. Pruning of branches or roots should be done by, or under supervision of, an arborist.
- Provide irrigation of trees during and after construction.
- Install turf grass no closer than 24 inches from the trunk.
- Protect existing soil and provide additional soil volume where feasible. Aerate existing soil around existing trees with air spade or hydro-jet if compacted. Take care not to damage existing tree roots with air spade or hydro-jet. See section 4.5.2 above.

4.5.4 Tree Planting in Dense, Urban Areas

When planting trees, particularly along streets where space is limited and roots may damage hard surfaces, consider the use of ***structural soil*** or ***modular suspended pavement system products*** to support the pavement above tree roots.

> Structural soil may allow the installation of ***large shade trees*** in narrow medians where the tree otherwise may conflict with infrastructure; however it is not a treatment media.

Structural soil is an engineered planting medium that consists of a stone or aggregate skeleton structure for strength, planting soil , and in some cases a hydrogel to adhere the two materials together, which allows urban trees to grow under pavement. The structural soil system creates a load-bearing matrix with voids filled with soil and air, which allows for greater tree growth, better overall health of trees, and reduced pavement uplifting by tree roots. The voids that benefit the tree roots also provide increased stormwater storage capacity, allowing tree pits in paved areas to serve as a series of small detention basins. Before including structural soil in your project, please contact the municipality for information and requirements specific to the local jurisdiction.[2] Note that structural soil supports the long term health of trees that may be considered for interceptor tree credit, but it is not an acceptable media for providing stormwater treatment.

Load-bearing modular suspended pavement system products have also been developed to allow the planting of trees in uncompacted native soils, fill soils, or stormwater treatment soils, extending under sidewalks and other areas of pavement. These products provide similar benefits in terms of pavement support and tree health as structural soil. When filled with biotreatment soil, modular products can be used to increase the surface area of a tree well filter and provide more capacity for stormwater treatment.

Modular products, such as the Silva Cell (Figure 4-10) are typically composed of a frame (or frames) and a deck. The frames can be stacked one, two, or three units high before they are topped with a deck to create a maximum amount of soil volume for tree root growth and stormwater infiltration. Newer versions can also be modified to different heights without stacking. Cells can be installed laterally as wide as necessary. Void space within the cells may accommodate the surrounding utilities. More information on the use of these systems is provided in Section 6.3.

Figure 4-10: Silva Cells (Source: Deep Root Technologies, www.deeproot.com). The use of this photograph is for information only, and is not an endorsement of this or any other proprietary product.

4.6 Site Design Requirements for Small Projects

Provision C.3.i of the MRP requires small projects that meet the following thresholds to include one of six site design measures listed below:

- Projects that create and/or replace at least 2,500 but less than 10,000 square feet of impervious surface; and
- Individual single family home projects that create and/or replace 2,500 square feet or more of impervious surface.

[2] See the website http://www.hort.cornell.edu/uhi/outreach/index.htm for more information on structural soils.

Applicable projects must implement at least one of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for use.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.

To help select site design measures appropriate for small projects that meet the thresholds described above, the Santa Clara Valley Urban Runoff Program collaborated regionally with the Bay Area Stormwater Management Agencies Association (BASMAA) and developed the following four fact sheets:

- Managing Stormwater in Landscapes
- Rain Gardens
- Pervious Paving
- Rain Barrels and Cisterns

These factsheets, and further detail on implementing site design for small projects, are presented in Appendix K.

To supplement guidance provided in the regional fact sheets, refer to Table K-2 in Appendix K to identify key opportunities and constraints for the site design measures listed in Provision C.3.i. Choose one or more site design measures that are a good match for the project site. Only one site design measure is required for small projects, but additional measures may be selected to increase the water quality benefits of your project.