Pest Management Alliance Grant Final Report
Grant Agreement: 10-PML-G002

Pesticide-free Park and Demonstration Gardens at Guadalupe River Park, San José, California

Prepared for the Department of Pesticide Regulation

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DPR Grant Project Final Report

Overview

The project was designed to address the use of commercial herbicides such as Triclopyr, Glyphosate and Oxadiazon; rodenticides such as Diphacione, Chlorophacione, and Fumitoxin in municipal landscape management; and common residential pesticides such as Oxyfluorfen, Endothal, Glyphosate, and Triclopyr.

The project was composed of the following integrated components: (1) An urban park maintained using Integrated Pest Management (IPM) techniques; (2) Two residential-style demonstration gardens totaling 5,000 square-foot area to serve as a venue for workshop training and demonstration of IPM for residents, commercial landscapers and municipal professionals; (3) Training focused on sustainable landscaping and IPM for residents, landscapers, and municipal staff; and (4) Creation of a pesticide-free park model through data collection and documentation that can be applied to San José parks and others in the Santa Clara County.

The City of San José (City), the tenth largest city in the U.S., is home to more than one million people. As part of its commitment to environmental protection and sustainability, the City has been incorporating IPM into its park maintenance program since 2002 and was recognized in 2009 by the California Department of Pesticide Regulation (DPR) as an "IPM Innovator" for its commitment towards less toxic pesticide use through the City's IPM program. An interdepartmental Pest Management Committee oversees and plans for IPM practices in the City. The grant project complemented the significant resources that the City currently invests in IPM as a means to achieve more sustainable methods of pest control as well as worker safety.

The project also aimed to promote and demonstrate the effectiveness of IPM through the installation of demonstration gardens; training of municipal and commercial landscapers and residents; and production of various media, educational materials, and guides. Through these activities, the project promotes wider acceptance and adoption of IPM as an effective means of pest management in urban parks and private gardens. The project goals were supported by a wide variety of grant deliverables designed to have a lasting value as teaching tools for future IPM activities both in the private and public sectors. Project goals, tasks, and deliverables are described in this report.

The project involved a diverse alliance team including members of the Environmental Services and Parks, Recreation and Neighborhood Services (PRNS) Departments of the City of San José; Santa Clara County; and the Guadalupe River Park Conservancy or GRPC (a non-profit dedicated to promoting awareness and stewardship of the Guadalupe River Park and Gardens). The project took place at the Guadalupe River Park and Gardens.

Goal 1: Create a pesticide-free urban park project that enables localized testing of and training on IPM-based horticultural practices.

1.0. The Management Team will develop an IPM Plan for Pesticide-Free Park Management in the Courtyard Garden including techniques to control weeds in established turf areas and barn owl nesting boxes to promote natural predation and control of squirrel populations.

The central component for this deliverable was to change practices used to maintain a 4-acre urban park area from traditional to IPM-based maintenance concepts. In particular, this portion of the project included tasks for testing chemical-free weed abatement and turf health enhancement techniques; creation of an IPM training module for staff; conducting a chemical-free ground squirrel population control program; and creation and implementation of an IPM-based management plan.

The Courtyard Gardens area of Guadalupe River Park is easily accessible by car, bike, or mass transit, and is supported and promoted by the GRPC. The project started with training maintenance staff with Bay-Friendly maintenance practices. An IPM-focused draft maintenance plan was developed, which included input from the maintenance staff and their manager. It also received guidance from the Santa Clara County IPM Program Coordinator. During the grant term, additional Parks maintenance staff received various trainings, including hands-on focused training by the Bay-Friendly Landscape Maintenance Training and Qualification Program, Santa Clara County Green Gardener Certification Training, and the Santa Clara County IPM Coordinator.

The Final IPM Plan for the Guadalupe River Park and Gardens, Courtyard Garden is attached.

1.1. Construct a 15,000 square-foot weed prevention demonstration/trail area within the park.

The 15,000 square foot weed prevention demonstration area was constructed using the sheet mulching technique with various sheeting types and thicknesses of mulch, including one treatment using compost as mulch. One approximately 1,200 square foot area was left as a control plot. Although considerable weed inhibition was observed with all treatments except compost, best performance was seen with the deepest mulch depth of six inches. Two educational signs were produced for display at the grand opening of the Nature's Inspiration (NI) Gardens with the intent of educating the public on the benefits of this IPM technique. Additional techniques including soil solarization and various turf management practices also provided useful information on weed abatement techniques specific to this location. Full details of this deliverable are included in the Pesticide-Free Park Model Case Study Report (Task 4.1). The Case Study Report will be available for City staff on the City's intranet site.

1.2. Create a municipal landscape IPM training module based on the establishment of the pesticide-free park that incorporates results from the pesticide-free project. The maximum duration of the training module will be one hour.

Four training modules were developed for municipal staff totaling one hour estimated training time. The IPM topics covered are:

1. Identifying and Controlling Common Weeds
2. Preventing Weeds with Soil Solarization
3. Benefits of Mulching and Compost
4. Basic Tips for Gopher Trapping

The training module is available to municipal staff any time on the City's intranet site. It is expected that the content will be augmented with additional topics as needs are identified and additional content becomes available. Training on the City's IPM policy and standard operating procedures (SOPs)/best management practices (BMPs) will be the next module added.

1.3 Conduct a two-year multi-phase ground squirrel control program by May 31, 2011 and report percentage reduction in squirrel damage every year for a two year period.

During the initial investigation of the project area after the grant contract was approved, it was determined that two parts of the project area had two different types of rodents. The Courtyard Park, most of which is turf, is impacted by gophers; whereas the adjacent Heritage Rose Garden and the Historic Orchard are impacted by ground and tree squirrels.

A contractor, Swat Pest Control was appointed to trap these rodents during the spring in 2011 and 2012 (from May to October), however an AmeriCorps volunteer through the GRPC ultimately provided most squirrel trapping services. As a result of the trapping, the GRPC had their first successful fruit harvest in three years in summer of 2012 with over 3,000 pounds gathered for distribution to food pantries and homeless shelters. Since the orchard is used as a teaching tool for children, there were logistical issues in coordinating the trapping efforts, but these were overcome with careful timing.

The construction of the shade cloth project as a trial for squirrel control at the historic orchard proved to be infeasible due to site constraints. The orchard is surrounded by a fence and therefore provides a practical place to install a visual barrier for excluding squirrels. However, existing squirrel burrows extend under the fence from the outside to the inside of the orchard. In order for the visual barrier to be effective, these underground pathways need to be collapsed. Due to the location of the trees around the perimeter fence of the historic orchard, demolition of the burrows without risk of damaging the roots of these trees was not possible.

The park is located within the flight path of the San José International Airport. Any activity that encourages bird population in the area is not allowed in the flight path. Hence the trial of biological control of rodents

using hawk perches or owl boxes could not be implemented. This information was unknown at the time of writing the grant proposal or the development of the contract.

1.4 Implement the IPM plan for Pesticide-Free Park Management to eliminate the use of pesticides in the project area though modified horticultural practices.

The pilot pesticide-free park played a very important role in achieving the overall goal of moving towards more sustainable landscaping practices. Once the activities were defined by the framework of the IPM Plan and it was understood that the threshold of acceptance from management and residents was modified; ground staff were more open to use the space to try out new techniques for testing chemical-free weed abatement and turf health enhancement techniques.

The project started by training the maintenance staff in charge of managing the pilot park in sustainable landscaping practices. A draft of the IPM work plan was then developed for the Park in collaboration with the ground staff, and other alliance members such as the IPM Coordinator and landscape staff at the Santa Clara County's IPM program. Maintenance staff implemented cultural practices according to the work plan. The work plan was discussed and revisited from time to time to make modifications as needed.

The IPM Work plan was based on various tools available on the Bay-Friendly Landscape Website, which included a Bay-Friendly Site Analysis Form, maintenance specifications, and contract documents. We reorganized these templates according to the needs of our project site. The work plan included the following:

- Narration of the maintenance goals
- A site analysis that documented the site characteristics such as soil type, climate, rainfall, wind direction, sun and shade conditions etc. based on Bay-Friendly Site Analysis Form (available at http://www.bayfriendlycoalition.org/BFLandscapeTools.shtml)
- Documentation of plant species (e.g. turf, perennials etc.)
- General maintenance practices for the overall site, such as an action plan for maintaining healthy soil
- Specific maintenance practices for each of the plants, framed as specific action plans
- Identification of common weeds found on the site and their management methods based on University of California Statewide IPM Program (UC IPM) guidelines
- Documentation of other pests such as rodents, and a control plan
- Soil reports detailing soil characteristics
- Types of hardscape and their maintenance plan
- Irrigation schedule optimized for maintaining healthy plants, turf, and soil

The role of a written maintenance plan is to document the maintenance goals and practices for the site, so there is clear communication between all stakeholders (i.e., management, maintenance staff, volunteers, etc.). A written plan is especially important for knowledge inheritance in case of staff transitions, knowledge sharing among project sites, maintenance and management staff, and for outreach and education purposes. This plan could also turn into a comprehensive reference document for site maintenance, depending on the additional references added to the plan.

Modified horticultural practices proposed by the IPM Plan were implemented in the pilot area, and results are documented in the Pesticide-Free Park Model Case Study Report. Maintenance practices included healthcare of soil and turf, mowing at the rate prescribed by UC IPM. No insecticides or rodenticides were used in the

area, although limited use of herbicides did occur, especially to control Bermuda grass in the mulched areas of the Nature's Inspiration Gardens and on paths where excessive weed growth could cause a tripping hazard. Weed flaming is now being piloted to evaluate control effectiveness on paths.

During the course of project, City staff also developed methodologies for mapping of weeds and gopher holes using Geographic Information Systems (GIS) based methods. This technique developed a preliminary baseline study of weeds and gopher holes at the Courtyard Garden Park, which can be used for future comparison. The methodologies were documented and will be available for municipal staff as training materials.

Challenges:

Getting the ground staff to accept this new methodology was one of the first challenges. Staff takes professional pride in the quality of the landscape they maintain, and has natural reluctance to the new process that only yields result in the long-term. Transitioning to a preventative maintenance plan required that no pesticide be used for a few years, while the health of soil and turf was regained through mechanical and cultural practices such as regular aeration, use of compost or organic fertilizers, dethatching, frequent mowing, overseeding, etc. These processes produced results slowly, whereas use of herbicides provided immediate results. These challenges were overcome by constant reassurance and support by the direct managers in the PRNS and targeted training on maintenance challenges, and one-on-one training by the maintenance staff and coordinator of Santa Clara County's IPM Program. The long experience of the County staff and their confirmation of the effectiveness of horticultural practices they have adhered to for the past two decades provided a good inspiration for staff at this project site. Hands-on work at the project site, such as the construction of the weed-prevention demonstration area, helped with the understanding of the new practices.

During the project period, the City's PRNS Department went through fiscal crisis, which resulted in lay-offs and staff rotations that negatively impacted the service level at this project site.

Lessons Learned:

Some of the lessons learned are related to the management of an IPM program, including handling the transition from traditional techniques to an IPM-based system. Successful transition of the system needs to take a multi-pronged approach, which includes:

1. Gaining acceptance of IPM by staff and other stakeholders
2. Thorough training of new methodologies
3. Creation of pilot projects or touring example sites that demonstrate a successful end-result
4. Coordination between all stakeholders related to the project including management, elected officials and decision-makers, users of the sites, and most critically, the maintenance staff
5. Modified resource management (e.g., staff schedule with the understanding that spreading mulch may be resource intensive, but will reduce subsequent visits to that site during the year), availability of funds with appropriation in the right place, etc.

The IPM Plan modified horticultural practices that were implemented in the pilot area and results are documented in the Pesticide-Free Park Model Case Study Report. No insecticides or rodenticides were used in the area, although limited use of herbicides did occur, especially to control Bermuda grass in the mulched areas of the NI Gardens and on paths where excessive weed growth could cause a tripping hazard. Weed

flaming is now being piloted to evaluate control effectiveness on paths. Lessons learned in the Courtyard Gardens will be used to modify future horticultural practices Citywide. It is also expected that some practices that require time to mature, such as modified turf maintenance practices, will deliver further lessons in the months following the grant period.

The Final IPM Plan for the park is attached. It is also available by contacting the Department of Pesticide Regulation or City of San José, Environmental Services Department.

Goal 2. Encourage local residents to use sustainable residential landscaping practices by providing residential demonstration gardens, IPM trainings, and brochures about pest-resistant and tolerant gardens and plants.

2.0. Develop and conduct a design competition among interested landscapers and designers to select the demonstration garden design.

In early 2011, the City conducted a design competition inviting proposals for demonstration home gardens. The competition was widely advertised through the City's online contract advertisement websites, professional networks such as the local chapters of American Society of Landscape Architects and Association of Professional Landscape Designers, and through organizations such as local branches of California Native Plant Society. Three entries were received. In view of the short timeline of the project, and to honor the efforts the participants put into preparing their entries, it was decided to select winners from among these three entries, and not conduct another competition. Design evaluation criteria were formalized and provided to judges. The judges included two City landscape architects, one professional landscape designer, one Master Gardener and the City's Integrated Waste Management Program staff. The two winners were: Kim Leichner and Diane Goldsmith.

A professional Landscape Architect, Sherri D. Osaka, was hired to guide the garden project. The task of the contractor involved designing the broader area in the park to integrate the gardens; revise the original proposals as necessary to fit the project; and guide the installation of the gardens. Ms. Leichner and Ms. Goldsmith had shown interest in volunteering some of their time to provide input during the garden designing process. They worked with Ms. Osaka to create the final designs for the demonstration gardens. The designs served as the basis for final construction and installation plans for the gardens and helped raise awareness of the gardens' availability as a resource and example.

Due to the location of existing concrete pathways in the park and the design of the irrigation valves, it was determined that an area larger than originally envisioned needed to be re-landscaped, so that (a) the new gardens blend with the surrounding plants, and (b) hydrozones were matched. The final landscaped area is almost 5,000 square feet. The gardens were installed by the end of February 2012.

2.1. Complete construction of the first of two approximately 900 square-foot residential demonstration gardens showcasing basic sustainable landscaping principles that will help residents adopt IPM practices.

Sherri Osaka integrated the designs from the design contest into the park spaces and guided the construction phase. Project drawings were reviewed by the City's Department of Public Works to ensure the specifications conformed to City standards. Bayscape Inc., a landscape construction and maintenance company under contract with the City's Public Works Department, constructed the NI Gardens, including irrigation, hardscape, plantings, and initial maintenance. Due to the nature and shape of the available park spaces, the final total landscaped area is almost 5,000 square feet, although the actual demonstration areas are somewhat smaller frames within that area. Both NI Gardens were installed by the end of February 2012. The NI Gardens had nearly immediate value as teaching tools and media events, trainings, and tours were conducted in the NI Gardens immediately after their installation.

2.1.1. Develop interpretive signs that describe the IPM practices utilized.

Ten interpretive signs were professionally designed, manufactured, and installed in the demonstration NI Gardens. The signs highlight the following sustainable gardening practices and principles:

1. How Cardboard Works as a Weed Barrier
2. How Mulch Recreates the Forest Floor
3. How to Slow the Flow of Rainwater
4. How Healthy Soil Makes Healthy Plants
5. How Nourishment Comes Naturally
6. Right Plant in the Right Place
7. This Watering System Delivers
8. Connect to the Ecosystem with Native Plants
9. What was Here Before?
10. Being Bugged in the Garden?

The signs serve as sequential stops and discussion points for tours of the NI Gardens, both docent-led and self-guided using the self-guided tour brochure (Task 3.4). The contents of the signs are also used for the multimedia tour of the NI Gardens.

2.2. Develop and publish a Pest Tolerant Home Garden Manual through the collaboration with City staff, consultants, and contractors to be distributed to 1,200 residents with a goal of increasing their level of understanding of the issues by at least 50 percent.

The original concept for the Pest Tolerant Home Garden Manual was to create a polished hard copy manual that could be used as a reference. Through discussions with City Staff, consultants, and contractors, it was determined that a more demand-driven paperless delivery model would be more effective and in keeping with the overall sustainability ideals of the project. The manual was therefore developed sequentially, using a modular approach the can be printed as needed, but is equally informative and effective when viewed "paperlessly." This gives residents the ability to view or print as needed only the sections that they find relevant.

Factsheets:
Ecology Action of Santa Cruz developed content for seven technical factsheets that cover long-term sustainable landscaping principles for residents. The technical factsheets cover the following topics:

1. Start with Healthy Soil
2. Fertilize Responsibly
3. Steps to Sustainable Garden Renovation
4. Right Plant for the Right Place
5. Water Wisely
6. Compost for Healthy Soil and Plants
7. Mulch for Healthier Soil and Plants

These factsheets are posted on the NI Gardens webpage (http://www.sanjoseca.gov/index.aspx?nid=1512) and on partner agency websites. Hard copies will be made available at the Guadalupe River Parks Conservancy Visitors Center and Community and Senior Centers.

Garden Design Concepts:
Sherri Osaka of Middlebrook Gardens developed four design concepts appropriate for various types of single-family home front yards, to be used as part of the sustainable home garden manual. These design concepts are based on the Café and Nectar NI Gardens and conceptualize designs with different sizes, shapes, and sun exposure. Middlebrook Gardens developed content and garden illustrations for six additional garden concept designs based on other existing demonstration gardens. All design concepts include planting basics and construction notes for sustainable landscaping. The list below summarizes the Garden Design Concepts.

Café Garden Inspired:
1. Small Sunny Yard
2. Small Slightly Shaded Yard

Nectar Garden Inspired:
1. Large Sunny Yard
2. Large Slightly Shaded Yard

Additional Garden Design Concepts:
1. The Shade Garden
2. The Children's Garden
3. The Dry Creek Garden
4. The Edible Garden
5. The Recycled Garden
6. The Wildlife Garden

The design concepts are available on the NI Gardens website:
http://www.sanjoseca.gov/index.aspx?nid=1512, and listed on the "List of Attachments"and available by contacting the Department of Pesticide Regulation or the City of San José Environmental Services Department.

2.3. Create a multi-media IPM training module for residents based on the demonstration gardens.

An online residential training module was developed based on the contents of the factsheets. The training module is available on the NI Gardens website at http://www.sanjoseca.gov/index.aspx?nid=1512. The training focuses on the following topics:

- Compost for Healthy Soil and Plants
- Fertilizing Responsibly
- Mulch for Healthier Soil and Plants
- Right Plant for the Right Place
- Start with Healthy Soil
- Steps to Sustainable Garden Renovation
- Water Wisely

2.4. Complete construction of the second residential demonstration garden.

Bayscape Landscape Management installed the NI Gardens and was contracted to assist with the general maintenance of the gardens. They provided the following services:

- supplied and installed replacement plants (native and drought tolerant plants per the garden plan specifications)
- replaced and re-graded mulch over planting areas
- conducted manual weed removal
- adjusted drip lines for new plants
- installed garden furniture (a bench, a café table, and chairs)
- conducted general maintenance for 90 days

Both NI Gardens, Café and Nectar Gardens, were completed simultaneously. See Task 2.1 for details.

2.5. Create and implement a volunteer-based garden maintenance plan for the demonstration gardens.

A garden maintenance plan was created for the NI Gardens. The plan includes both short and long-term maintenance objectives, and outlines the steps needed to maintain the garden with little or no chemical use.

Goal 3. Improve the skills and knowledge base of City staff and residential landscapers by providing sustainable landscaping training and hands-on, focused IPM trainings.

3.0. Publicize the demonstration gardens and training courses for residents and landscapers on sustainable landscaping and IPM through outreach events, fliers, and team partner websites.

The NI Gardens were first opened to the public during the annual "Spring in Guadalupe Gardens" festival on April 28, 2012. Temporary signs were printed to be displayed in the garden to facilitate self-guided tours of the Café and Nectar Gardens. A sustainable landscaping training, based on the designs of the demonstration gardens, was taught by Landscape Architect Sherri Osaka.

The Grand Opening for the NI Gardens was celebrated in conjunction with the Annual National Pollution Prevention Week on September 22, 2012. The Director of the Department of Pesticide Regulation, Brian Leahy, and a few other dignitaries of the City of San José, Guadalupe River Parks Conservancy, and Santa Clara County participated in a media event that highlighted the garden's project completion and sustainable gardening principles for Santa Clara County residential gardeners. Residents had an opportunity to participate in two Lose Your Lawn Workshops, which demonstrated the conversion of lawn to beautiful, easy care, and sustainable NI Gardens. They also had the opportunity to join a Guadalupe River "creek expedition", meet gardening experts for advice and specific information pertaining to their yards, and take a self-guided tour of the Café and Nectar NI Gardens. This grand event was publicized through a variety of media:

- Bright Green San José Facebook
- General Facebook advertisement
- City of San José Website
- City of San José Environmental Services Department Website
- Earth 911.com
- Bay Area Pollution Prevention Group Website
- Community Calendar Listings
- Postcards highlighting event details were distributed to local libraries, pharmacies, libraries, Farmer's Markets, and community and senior centers; and
- San José Mercury Newspaper

At this event, City staff captured its very first e-mail distribution list for future training and ongoing outreach efforts for the NI Gardens. To date, the list contains 151 contacts who are interested in receiving information about sustainable gardening.

3.1.1. Provide additional sustainable landscaping training session(s), reaching a minimum of 40 City of San José staff and a minimum of 10 County of Santa Clara Staff, with a goal of increasing their level of understanding by a minimum of 80 percent.

The City decided to use the Bay-Friendly Landscape Maintenance Training and Qualification program delivered by the Bay-Friendly Coalition for this purpose. This is a well-established sever week, 24 hour training program for public and private sector landscape maintenance professionals, based on the "Bay-Friendly Principles of Sustainable Landscaping". Details of the training are available at http://www.bayfriendlycoalition.org/BFLMTQP.shtml. Participants need to attend all class sessions and pass a written examination at the end in order to receive certification.

Two Bay-Friendly training sessions were conducted. The first ran from March 17 to April 28, 2011, from 9:00 a.m. to 12:30 p.m., one day a week, at the Edenvale Community Center in San José. Twelve staff from the City

and 9 staff from the alliance partner Santa Clara County participated in this training, along with 30 professional commercial landscapers. The second ran from October 2 to November 12, 2011, and was attended by 34 City staff, 9 County staff, and 4 commercial landscapers. This training had never before been provided in Santa Clara County. In the past, commercial and municipal landscapers from Santa Clara County had to travel to Alameda and/or Napa counties to attend the Bay-Friendly training sessions.

The Bay-Friendly Landscape Maintenance Training and Qualification Program was offered to municipal and professional landscapers in spring 2011 and in fall 2012 to accomplish this task. The topics covered in the training included:

- Landscaping Locally
- Landscaping for Less to the Landfill
- Nurturing the Soil
- Conserving Water
- Conserving Energy
- Protecting Water and Air Quality
- Creating and Protecting Wildlife Habitat

Municipal Staff Training Totals:

Date	Topic	Opportunities	Participants	City of San José	County	Professional /Commercial	Other
March 17 – April 28, 2011	Bay-Friendly Landscape Maintenance Training and Qualification Program	60	51	12	9	30	
October 2 – November 13, 2012	Bay-Friendly Landscape Maintenance Training and Qualification Program	50	50	35	9	4	2
TOTAL		**110**	**101**	**47**	**18**	**34**	**2**

Both trainings were very well received by municipal staff from the City of San José, County, and professional/commercial landscapers. Participation greatly exceeded the target participation levels. In addition, training goals for professional landscapers (Task 3.2) were also supported by their participation in this training.

3.2. Provide one sustainable training session for professional landscapers each year of the grant. Reach a minimum of 100 gardeners in total during the grant term with a goal of increasing their level of understanding of the topic by a minimum of 80 percent.

The City chose the curriculum for the Santa Clara Valley Green Gardener Certification Training as the primary means for offering training to professional landscapers. The Green Gardener program began in Santa Barbara County in March 2000. In 2005, with support from the State Water Resources Control Board, Ecology Action collaborated with the Santa Barbara Program to standardize the curriculum and implement the program in the Monterey Bay area. The Program in Santa Clara County has been adopted by a consortium of cities in Santa Clara County and has been offered successfully for five years with continued high demand. The grant funds allowed for an additional spring session. The program is offered in English and Spanish and in cooperation with the Master Gardeners of Santa Clara County. Classes are conducted two hours every week for 10 weeks. Participants who completed at least eight classes and passed a final test were eligible for certification. Instruction topics included information on soil, fertilizers, integrated pest management, irrigation and plant selection, with the following learning goals:

- Use resources sustainably and cost-effectively
- Improve the health, appearance, and value of landscapes
- Reduce the risk of stormwater pollution from landscape maintenance activities
- Apply pesticides and alternatives safely

The capacity of the training was 35 and 30 for English and Spanish classes, respectively, and it was determined that the goal of creating opportunity for 100 gardeners would be reached if two English and one Spanish language sessions were held during the grant period. Classes were conducted at the GRPC's Visitor Center at 438 Coleman Avenue, San José. Ultimately, a combination of two Green Gardener and two Bay-Friendly trainings were used to reach training goals for professional landscapers.

The first session was conducted from March 1 to May 3, 2011. Thirty-six participants initially enrolled in the class. Thirty participants completed all the requirements of graduation, and graduated on May 24, 2011. The second session of the program was conducted in Spanish, and ran from February 28 to May 2, 2012. Twenty-six participants started the class, and 19 completed all graduation requirements and graduated on May 17, 2012. The 2012 session incorporated a visit to the newly constructed NI Gardens.

The City conducted outreach for the training by sending invitation letters and a language appropriate flier providing details of the training was to about 600 landscaping companies for each of the two sessions. The companies were selected from a list of landscapers who hold a business license in the field of landscape design and maintenance in San José. For the 2011 class, letters were also sent to landscape pest control license holders in Santa Clara County. A total of 62 professional landscapers attended the training and a total of 49 received certification.

The Bay-Friendly Landscape Maintenance Training and Qualification Program was offered during spring 2011 and fall 2012. It also helped fulfill this grant deliverable expectation. An additional 34 professional landscapers received training on the Seven Bay-Friendly Best Practices: Landscaping locally, Landscaping for less to the Landfill, Nurturing the Soil, Conserving Water, Conserving Energy, Protecting Water and Air Quality, and Creating and Protecting Wildlife Habitat.

Professional Landscapers Training Totals:

Date	Topic	Opportunities	Participants

March 1 – May 5, 2011	Santa Clara County Green Gardener Certification Training	40	36
March 17 – April 28, 2011	Bay-Friendly Landscape Maintenance Training and Qualification Program	60	30
February 28 – May 2, 2011	Santa Clara County Green Gardener Certification Training (Spanish Session)	30	26
October 2 – November 13, 2012	Bay-Friendly Landscape Maintenance Training and Qualification Program	60	4
TOTAL		**190**	**96**

3.3. Following the completion of the first demonstration garden, provide up to 300 residents and gardeners with hands-on training based on IPM practices and lessons learned from the garden with a goal of increasing their level of understanding of the topics by a minimum of 80 percent.

Trainings for residents and gardeners were and are expected to continue to be very successful. Training opportunities were provided at the NI Gardens through the Santa Clara County Master Composters and the Bay Area Water Supply and Conservation Agency (BAWSCA). These trainings utilized the NI Gardens as a hands-on training venue for teaching various sustainable gardening techniques. In certain instances, the grant agreement language required the creation of training "opportunities." We considered each available space in a provided training an opportunity. With Bay Friendly trainings, all available spaces (opportunities) were filled. In residential trainings, there was less control over attendance, even when participants pre-registered, so actual attendance at those trainings was sometimes much less than the available opportunities provided. The following table summarizes the hands-on training opportunities created, and actual resident participation:

Residential Training Totals:

Date	Topic	Opportunities	Participants
August 22, 2012	Master Composters Training	60	55
September 4, 2012	Master Composters Training	60	14
September 22, 2012	Lose Your Lawn Workshops (2)	50	46
September 29, 2012	Hardscape Design Workshop	50	23
October 20, 2012	CA Native Plants Workshop	25	9
February 16, 2013	Sheet Mulching Workshop	30	12
March 16, 2013	Sheet Mulching Workshop	30	21

TOTAL	305	180

A total of 180 residents attended trainings on compost, permeable hardscapes, and sheet mulching. All workshops were tied to the NI Gardens where residents received a docent-led tour or took a self-guided tour. Of the 180 participants that attended the workshops, 80% indicated via survey an 80% or greater increase in understanding of composting, sheet mulching, hardscape designs, and integrated pest management. The NI Gardens will serve as an ongoing venue for trainings on these and other sustainable landscaping topics to be provided by various groups including the Santa Clara County Master Gardeners and Master Composters, the Bay Area Water Supply and Conservation Agency (BAWSCA), and others.

3.4. Develop group tours of the NI Gardens, publicized through standard modes of the City and the Guadalupe River Parks Conservancy.

Group tours of the NI Gardens are available through the Guadalupe River Parks Conservancy. Tour availability is advertized on the City's NI Gardens website and on the Conservancy's website. See Task 3.4.6 for details.

3.4.1. Create contents for the self-directed tour and group tour to disseminate the demonstration garden-specific educational information to the public.

Contents of the self-directed and group tours were developed based on the concepts and practices in the NI Gardens. They were reviewed internally by various divisions in the City's Environmental Services Department, the GRPC, and other partner agencies.

3.4.2. Create a hard copy brochure containing basic information and the plans of the NI Gardens.

A hard copy brochure was created and first used at the grand opening of the NI Gardens. The brochure contains all the basic information and plans for the NI Gardens, and directs readers to additional resources available on the brochure. The brochure is available at the GRPC Visitors Center, City of San José Community and Senior Centers, and on partner agency locations. It is also available on the NI Gardens website, http://www.sanjoseca.gov/index.aspx?NID=1512.

3.4.3. Create a multi-media tour to be made available on the website.

Interactive maps of the NI Gardens are available on the NI Gardens website, http://www.sanjoseca.gov/index.aspx?NID=1512. This is an electronic version of the *Self-Guided Tour* brochure so that those interested in the NI Gardens can "go paperless" when visiting the NI Gardens in person or online. The interactive tour is easily accessible by scanning the Quick Reference (QR) Code that appears on the NI Gardens outreach materials, such as the ***Self-Guided Tour*** brochure.

3.4.4. Explore opportunities of adapting the multi-media tour for cell phone applications (apps) and podcasts, if possible.

A wide range of opportunities exist for adapting the multimedia tour for cell phones. Future implementation of such applications will depend on future support funding or possible partner support. Until then, a QR Code was developed for the NI Gardens, with QR code stickers affixed to each garden sign in the Café and Nectar NI

Gardens. These direct mobile browsers to the mobile-enabled version of the NI Gardens website where the *Self-Guided Tour* brochure, technical factsheets, garden concept designs, and participant surveys can be found.

3.4.5. Distribute these applications through proper media channels to be conveniently available during the tour or for in-home reference.

The NI Gardens mobile-enabled capability provides sustainable gardening principles at the resident's fingertips. Residents can take an interactive tour of the Café and Nectar NI Gardens, view and download garden concept designs, technical factsheets, and residential module, and complete a participant survey after completing their online or physical tour of the NI Gardens. The NI Gardens mobile site is easily accessible by scanning the QR code that appears on the garden plaques, collateral, and partner agency websites.

3.4.6. Mobilize docents through the Guadalupe River Parks Conservancy Docent Program to provide garden tours, and publicize these tours through City and outreach partner websites and other standard outreach modes.

Group tours have been arranged through the Guadalupe River Parks Conservancy (GRPC). The GRPC arranges informal group tours for interested individuals and/or groups on request. Tour guides provide an overview of the GRPG and highlight special attributes of the park that include irrigation of the landscape with recycled water, volunteer maintained Courtyard Gardens, such as the Heritage Rose and Dahlia Gardens, and the NI Gardens; and the native sod pilots.

A descriptive tour script was prepared (Task 3.4.1) to support docent-led tours. Garden tour information is available on the NI Gardens, GRPC, and additional partner agency websites. Participants can sign-up for a tour by sending an e-mail to the GRPC at education@grpg.org. Tour guides will ask participants to complete the online Participant Survey at http://www.sanjoseca.gov/index.aspx?nid=1512.

3.4.7. Develop participant survey to determine the number of participants adopting IPM practices.

Participant surveys were completed to assess residential and municipal knowledge and adoption of IPM practices. The following is a list of surveys on the NI Gardens and City of San José intranet site, http://www.sanjoseca.gov/index.aspx?nid=1512:

- Participant Survey for NI Gardens Tour
- Residential Module Participant Survey
- Municipal Module Participant Survey (accessible on the City of San José intranet site)

The surveys have proven useful for gauging the effectiveness of the tours, residential workshops (and residential module), and municipal module for raising awareness and understanding of IPM-based gardening

practices. Of the 180 residential participants that attended the workshops, 80% indicated via survey an 80% or greater increase in understanding of composting, sheet mulching, hardscape designs, and integrated pest management.

Goal 4. Disseminate information and lessons learned from the project by creating a pesticide-free park case study through data collection, documentation, and analysis that can benefit other urban-based agencies throughout the state and country.

4.0. Collect data on pesticide use, the effectiveness of modified and new landscaping practices, and need for, effectiveness of, and availability of volunteers.

A summary of pesticide use and the effectiveness of modified and new landscaping practices as well as an evaluation of the need for, effectiveness of, and availability of volunteers is included in the Case Study Report. Insecticides and rodenticides were not applied in the project area; however, limited herbicide use did occur within the IPM framework. Effectiveness of modified and new landscaping practices was greatly affected by the nature of the site. The proximity of the park to the riparian zone of the Guadalupe River and to the San José International Airport presented significant challenges to implementation of some modified techniques.

4.1. Prepare a case study report documenting the project including practices that work best and make available through City staff training, media coverage, professional journals, and regional networks.

The Case Study Report will be available for City staff on the City's intranet site. It is also being shared with regional partners through the Santa Clara Valley Eco-gardener group. This ad-hoc group includes other Santa Clara County municipalities and regional agencies, including the County of Santa Clara, BAWSCA, and the Santa Clara Valley Water District.

Summary

It is difficult to pick the most beneficial element of this diverse project. The Nature's Inspiration (NI) Gardens are perhaps the most visible and durable product of the project, providing a training venue, tangible example of sustainable landscaping, and enjoyable public park space. The NI Gardens, factsheets, and other products have been catalysts for bringing together many unofficial "alliances." The Santa Clara Valley Water District provided a rebate to help with the conversion of thirsty lawn to more sustainable landscape types and also reviewed factsheets and other materials. The Master Gardeners, Master Composters, and California Native Plant Society provided additional review of materials, and the Bay Area Water Supply and Conservation Agency provided valuable training for residents on water efficient and sustainable landscaping techniques. It is expected that other agencies will also use the gardens as a resource for their own individual interests since they incorporate so many individual facets of sustainability.

Another synergy was the involvement of the Santa Clara Valley Eco Gardeners group, which in addition to the agencies and groups already mentioned, includes participants from many local municipalities individually and collectively through the Santa Clara Valley Urban Runoff Pollution Prevention Program, and other groups interested in sustainable landscaping issues. This ad hoc group was brought together to share resources and avoid duplication of efforts when promoting sustainable landscaping. This project was able to jump start that process by bringing together so many different aspects of sustainable landscaping into the project

deliverables, especially factsheets, design concepts, tour materials, and trainings. The Eco Gardeners are now in the process of creating a central website that will act as a centralized “clearing house” for sustainable landscaping trainings and other activities, many of which will likely be held at or near the NI Gardens. The content from the factsheets has already been shared with this group for inclusion in other sections of the website. Links to this centralized website will be included on the City’s web pages showcasing the products of the grant project.

Less visible, but no less important were the lessons learned by municipal staff through the Pesticide-free Park Model. Many of the techniques applied were only made possible through the availability of grant funding. Recent budget and staffing cuts within the City of San José’s Parks Recreation and Neighborhood Services department have made funding for training and demonstration projects scarce. Implementation of this part of the project provided staff with hands-on experience with sustainable practices, and concepts that would otherwise have been unavailable.

One clear result of the project was that some sustainable landscaping practices can be effective and cost-saving in the long run, but sufficient personnel and material resources must be applied up front when converting maintenance practices from older chemical-based methods. Staffing shortages and other constraints made robust implementation of some practices in this project impossible, however sufficient experience was gained to understand resource and planning requirements when and if required start-up maintenance resources become available.

Training for municipal staff was also well received and immediately applied by municipal parks staff. The Bay-Friendly Landscaping trainings proved to be an effective tool to broaden staff’s experience with sustainable landscaping techniques so that they can be incorporated into general landscaping practices in municipal settings. Sheet mulching in particular was a technique that quickly showed its value, and a broader training was provided to City staff to familiarize them with it. This training was only possible with the funding provided through the grant.

The Department of Pesticide Regulation (DPR) provided partial or full funding for this project but does not necessarily recommend or endorse any opinion, commercial product, or trade name used.

List of Attachments

- Overview Factsheet: *Guide to Sustainable Landscaping: Your Yard's Role in the Valley Ecosystem*
- Nature's Inspiration Gardens Grand Opening Event Flyer, September 22, 2012
- Residential Training Flyers, Bay Area Water Supply and Conservation Agency
    - Hardscape Design Workshop (September 29, 2012)
    - California Native Plants Workshop (October 20, 2012)
    - Sheet Mulching Workshops (February 16 and March 16, 2013)
- Brochure: *Self-Guided Tour*
- Nature's Inspiration Gardens Tour Script
- Participant Surveys
- Case Study Report

The following items are available by contacting the Department of Pesticide Regulation or the City of San José, Environmental Services Department:

- Integrated Landscape and Pest Management Plan: Including Landscape and Maintenance Specifications
- Municipal Integrated Pest Management Training Modules
    - *Identifying and Controlling Weeds*
    - *Preventing Weeds with Soil Solarization*
    - *Benefits of Mulching and Composting*
    - *Basic Tips for Gopher Trapping*
- Garden Signage for Nature's Inspiration Gardens
- Technical Factsheets
    - *Start with Healthy Soil*
    - *Fertilize Responsibly*
    - *Steps to Sustainable Garden Renovation*
    - *Right Plant for the Right Place*
    - *Water Wisely*
    - *Compost for Healthy Soil and Plants*
    - *Mulch for Healthier Soil and Plants*
- Garden Concept Designs
    - Café Garden Inspired:
        - *Small Sunny Yard*
        - *Small Slightly Shaded Yard*
    - Nectar Garden Inspired:
        - *Large Sunny Yard*
        - *Large Slightly Shaded Yard*
    - Additional Garden Concepts:
        - *The Shade Garden*
        - *The Children's Garden*
        - *The Dry Creek Garden*
        - *The Edible Garden*
        - *The Recycled Garden*
        - *The Wildlife Garden*
- Residential Integrated Pest Management Training Module

FAQ Frequently asked questions about Sustainable Landscapes

Q1: Aren't sustainable landscapes expensive?

Answer: The installation costs of sustainable and conventional landscapes may be similar. However, a sustainable landscape is easier and less costly to maintain. To accommodate your budget, you can phase in the conversion, instead of doing the entire yard at once.

Q2: Will sustainable landscaping practices work for me?

Answer: Yes, nature has succeeded with sustainable landscaping and you can too!

Q3: Aren't lawns easier to maintain than a garden?

Answer: Lawns require mowing, watering, pest control, fertilizing, and weeding — all adding up to a burden on the gardener with impacts to the environment. Gardens can be simple, and once established, need little maintenance.

Q4: Can I still have a lawn in my sustainable garden?

Answer: Lawns can be attractive and desirable for certain activities, such as providing open space for children and pets. Identify the portion of your lawn that you most frequently use and design around it. You may be able to replace much lawn with native plants that will enhance the beauty of your yard. Consider also that a native, drought-tolerant, low-maintenance grass meadow can be as enjoyable or more interesting than a conventional lawn.

Additional Resources

Santa Clara Valley Master Gardeners
http://mastergardeners.org/scc.html

Bay Friendly Landscape Guidelines
www.bayfriendlycoalition.org

American Rainwater Catchment Association
www.arcsa.org

Slow the flow of Rainwater
www.waterboards.ca.gov/stormfilm/

City of San José - Environmental Services
www.sanjoseca.gov/gardening-composting

Reading List

Sustainable Landscaping For Dummies
by Owen Dell

Designing California Native Gardens
Glen Keator and Alrie Middlebrook

Rainwater Harvesting for Drylands and Beyond
Brad Landcaster

For more information about the Nature's Inspiration Gardens, use your smart device to scan the QR code.

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California Department of Pesticide Regulation

GUADALUPE RIVER PARK CONSERVANCY

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Steps for Converting a Traditional Landscape

- Eliminate or minimize lawn area
- Select plants based on the soil and lighting conditions of your yard
- Select drought-resistant California native or climate-adapted plants
- Group plants by their watering needs to make irrigation easy
- Use smart pest management
- Use pervious materials for walkways and patios
- Cover bare ground with mulch
- Plan for capturing and using rainwater

How to Maintain a Sustainable Landscape

- Install a water-efficient irrigation system
- Feed the soil naturally with compost and mulch
- Make your own mulch and compost onsite using plant debris
- Avoid pesticides and synthetic fertilizers
- Protect soil from compaction and erosion
- Use graywater or captured rainwater when possible

GREEN GARDENS HEALTHY CREEKS

Guide to Sustainable Landscaping

Your Yard's Role in the Valley Ecosystem

What is Sustainable Landscaping?

Sustainable landscaping is the use of design and maintenance practices that work harmoniously with your local climate and soils. A sustainable landscape is adapted to your area's rainfall patterns and can thrive with minimal watering. A sustainable landscape typically does not require pesticides or fertilizers and creates little or no waste.

In contrast, conventional landscapes may feature plants that need lots of water or may need gasoline-powered equipment to look groomed. Conventional landscapes may rely on pesticides and fertilizers to promote healthy growth. Rain or excess irrigation water can transport these chemicals down street gutters and into storm drains, which empty directly into the nearest creek and the San Francisco Bay. Such pollution is harmful to fish, wildlife, and our own quality of life.

A yard in step with the Santa Clara Valley Ecosystem

This guide provides the steps to convert all or a portion of your yard to a sustainable landscape that reflects the natural conditions of the Santa Clara Valley. We emphasize native, drought-tolerant plants that can thrive with either wet or dry years and that do well in our clay soils. Using these practices, you can enjoy a beautiful, economical yard that is easy to maintain — and that doesn't pollute nearby creeks.

Beneficial insects like this Green Lacewing need non-toxic gardens to thrive and provide natural pest control

Cost-savings and benefits of sustainable landscaping

Harmonizing your yard to local conditions may save you money on…

- your water bill
- purchases of pesticides and fertilizers
- energy for power equipment

and create a healthier yard by…

- reducing noise and air pollutants
- avoiding toxic pesticides
- providing habitat for birds, butterflies, and beneficial insects

"Collectively, our yards are an important part of the valley ecosystem. I enjoy knowing that my sustainable garden of native plants is in harmony with natural conditions and provides a healthy place for my family, friends, and wildlife."

~ Arvind Kumar, President, California Native Plant Society, Santa Clara Valley Chapter

How to Create a Sustainable Landscape

Start with Healthy Soil

Healthy soil supports healthy plants that resist pests, disease, drought, and other stresses. Applying compost and mulch and allowing soil organisms to thrive by avoiding pesticides will foster a healthy soil. The organisms will break down the compost, mulch, and plant clippings into vital nutrients. Plants that are nourished by these nutrients remain vigorous and naturally pest-resistant.

Right Plant in the Right Place

Different plants have different needs. Select plants to suit the soil, sunlight, and space in your yard. Plants need enough space to reach full size without frequent pruning. By placing plants in the right place, they will thrive naturally, remain healthy, and reduce the time needed for upkeep.

Water Wisely

Some plants tolerate a range of watering conditions; some are more sensitive. Watering too much or too little can weaken the plant. As stated above, grouping plants with similar watering needs makes it easier to provide the right amount of water. To optimize water use, deliver it near the roots. Drip and other smart irrigation methods deliver water directly to roots, allowing no excess water for weeds.

Use Smart Pest Management

There are several approaches to natural pest and weed management that — when used together (integrated) — can help avoid the need for pesticides and herbicides. Selecting plants adapted to our climate is the first step to avoid problems with pests, weeds, or disease. Other approaches include:

- **Use cultural controls** such as removing irrigation water and fertilizer from areas where you don't want weeds to grow.
- **Use physical controls** such as manual removal with tools, smothering weeds with a mulch barrier.
- **Use biological controls**, such as selecting competitive, desirable plants that make it hard for weeds to grow, or attracting beneficial insects to control insect pests.
- **Less-toxic herbicides** such as herbicidal soaps and vinegars can be used as a last resort.

A patchwork of native flowering plants and grasses will attract beneficial insects to your yard by providing food and habitat for them. Note that you'll have to tolerate a low level of pests in order to attract their predators. Consider changing your perspective: If you envision your yard as a meadow with multiple grass species and a few non-invasive weeds, you can resist reaching for chemical herbicides.

City of San José: the IPM Innovator Award Winner 2010.

All these techniques together are called "Integrated Pest Management" or IPM. For more information about IPM, visit the University of California website at ***www.ipm.ucdavis.edu***.

Slow the Flow of Rainwater

Your yard can actually retain and clean rainwater. Capturing and storing rainwater reduces the need for irrigation with precious drinking water. Using pervious pavement, rain gardens, swales, or dry creek beds, you'll help the ground soak up rainfall and reduce the amount that runs off and into a street gutter. These features may also add a unique, creative look to your landscape.

Conserve Energy and Reduce Greenhouse Gases

Your yard can help fight climate change! Healthy soil stores more carbon. Low-maintenance, properly spaced plants require little or no mowing and trimming with gas-powered equipment, and generate little yard waste to be hauled to landfills. This helps reduce the methane emissions (a potent greenhouse gas) at the landfill from decomposing yard waste. Reduced water use from a smaller lawn also means less energy is needed to pump, treat, and deliver irrigation water. In various ways, all the practices mentioned in this factsheet help toward the goal of reducing energy use and greenhouse gas emissions.

National Pollution Prevention Week
September 17-23, 2012

Be Part of the Green Solution!

Come learn about simple actions you can take to help prevent pollution.

▶ Drop off your expired or unwanted medications
for safe and proper disposal.

▶ Get a free digital thermometer
in exchange for your glass mercury thermometer.
Limit one per household.

▶ Event Locations

Saturday, September 15 ▪ 10:00 a.m. – 12:30 p.m.
Barbara Lee Senior Center
40 North Milpitas Boulevard, Milpitas

Monday, September 17 ▪ 12:00 p.m. – 2:00 p.m.
Cupertino Senior Center
21251 Stevens Creek Boulevard, Cupertino

Saturday, September 22 ▪ 9:30 a.m. – 12:30 p.m.
Kaiser Permanente San José Medical Center
Camino Verde & Santa Teresa Boulevard, San José

Saturday, September 22 ▪ 9:30 a.m. – 1:00 p.m.
Guadalupe River Park and Gardens
at Taylor & Seymour streets near the Heritage Rose Garden, San José

For more information, visit www.sanjoseca.gov/esd/calendar.asp or call (408) 945-3000.

Be the solution to creek pollution!

Coastal Cleanup Day

Saturday, September 15, 2012
9:00 a.m. – 12:00 p.m.

Come with friends, family, and lots of energy to help clean up litter. Wear long pants, sturdy shoes, gloves, sunscreen, and a hat!

Register at: **www.cleanacreek.org** for a creek cleanup site near you, or call **(408) 265-2607 ext 2739**.

Over for more activities and information ▶

San Jose/ Santa Clara Water Pollution Control Plant

Serving the cities of:
San José
Santa Clara
Milpitas
Cupertino
Campbell
Town of Los Gatos
Monte Sereno
Saratoga

To request an accommodation under the Americans with Disabilities Act, call 408 535 3500. Spanish, Vietnamese, and Chinese language services are available upon request. City of San José is committed to open and honest government.

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0912/JY/RB

National Pollution Prevention Week
September 17-23, 2012

Be Part of the Green Solution!

Grand Opening!

New at Guadalupe River Park and Gardens
Nature's Inspiration Gardens

Saturday, September 22, 2012
9:30 a.m. – 1:00 p.m.

Join the festivities as we celebrate these new gardens, funded by a California Department of Pesticide Regulation grant, that show you how to create beautiful landscapes in harmony with nature and healthier for you, your family, and the environment.

Lose-Your-Lawn Workshops

Learn the steps to a beautiful, easy care, sustainable garden. You may win **$350** in gardening materials!*

First Workshop: 9:30 a.m. – 10:30 a.m.
Second Workshop: 12:00 p.m. – 1:00 p.m.

- Tap our gardening experts for advice specific to your yard
- Bring home natural garden design concepts
- Save by finding out about landscaping rebates

Register at: **www.sanjoseca.gov/esd/calendar.asp** or call **(408) 945-3000**.

*All workshop attendees will receive garden supply coupons and a chance to win plants. Attendees' names will be entered into a drawing for a grand prize of $350 worth of gardening materials, courtesy of Zanker Road Resource Management; attendees must be residents of Santa Clara County and delivery of materials must be in Santa Clara County.

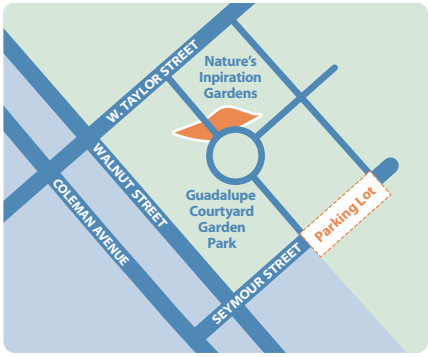
Creek Expedition

9:30 a.m. – 10:30 a.m.

See where your yard touches our creeks!

- One-hour walk on a paved trail introduces you to the creek ecosystem. You'll also learn how what's in your yard can travel to a creek.

Bring water, sunscreen, and a hat!



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California Department of Pesticide Regulation

GUADALUPE RIVER PARK CONSERVANCY

BAWSCA
Bay Area Water Supply & Conservation Agency

Register today for a FREE Landscape Workshop!

September 29, 2012
9 a.m. – 12 p.m.

Guadalupe Courtyard Gardens

Hardscape Design

This workshop held at a water-efficient demonstration garden will talk about permeable surfaces and their water conserving benefits. Learn how to design and install pathways and patios using decomposed granite, gravel, flagstone and pavers.

Register today at www.bawsca.org. or call 650-349-3000.
Additional classes available online.

BAWSCA's Landscape Education Program offers FREE classes designed to introduce homeowners, commercial property managers, landscape service providers, and others to the concepts of water-efficient and sustainable landscaping.

BAWSCA offers FREE classroom lectures and hands-on workshops that focus on:

- Sustainable Landscaping
  - Understanding Water-Use Efficiency in the Landscape
  - Use of California Native and Drought Tolerant Plants
  - Creating Healthy Soil
- Alternatives to Lawn
- Habitat Gardening
- Edible Landscaping
- Water-Efficient Irrigation Practices
- Parent/Child Gardening Activities

BAWSCA
Bay Area Water Supply & Conservation Agency

Register today for a FREE Landscape Workshop!

October 20, 2012
10 a.m. – 1 p.m.

Guadalupe Courtyard Gardens

Landscaping with California Native Plants to Save Time, Water, and Money

Discover how to create a sustainable, low maintenance, and water-conserving garden using native plants that are right for your yard. Lean about the Bay Area's water cycle and the use of California native plants to reduce your water use, garden waste, and time.

Register today at www.bawsca.org. or call 650-349-3000.

BAWSCA's Landscape Education Program offers FREE classes designed to introduce homeowners, commercial property managers, landscape service providers, and others to the concepts of water-efficient and sustainable landscaping.

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- Alternatives to Lawn
- Habitat Gardening
- Edible Landscaping
- Water-Efficient Irrigation Practices
- Parent/Child Gardening Activities

BAWSCA
Bay Area Water Supply & Conservation Agency

Register today for a FREE Landscape Workshop!

February 16, 2013 ***(If it rains, workshop will be held on February 23, 2013.)***
10 a.m. – 12 p.m.

Guadalupe River Parks Conservancy, 438 Coleman Avenue, San José

Sheet Mulching Hands-On Workshop

This workshop will discuss and demonstrate the process of sheet mulching. Sheet mulching is an effective and chemical-free process of removing lawn, promoting healthy soil and moisture, and keeping weeds away so that your garden can thrive! Learn the process of sheet mulching in this hands-on workshop, and take its benefits to your own outdoor space.

Register today at www.bawsca.org. or call 650-349-3000.

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  - Use of California Native and Drought Tolerant Plants
  - Creating Healthy Soil
- Alternatives to Lawn
- Habitat Gardening
- Edible Landscaping
- Water-Efficient Irrigation Practices
- Parent/Child Gardening Activities

FREE Landscape Classes February - May 2013!

BAWSCA
Bay Area Water Supply & Conservation Agency

Register today for a FREE Landscape Workshop!

March 16, 2013 *(If it rains, workshop will be held on March 30, 2013.)*
10 a.m. – 12 p.m.

Guadalupe River Parks Conservancy, 438 Coleman Avenue, San José

Sheet Mulching Hands-On Workshop

This workshop will discuss and demonstrate the process of sheet mulching. Sheet mulching is an effective and chemical-free process of removing lawn, promoting healthy soil and moisture, and keeping weeds away so that your garden can thrive! Learn the process of sheet mulching in this hands-on workshop, and take its benefits to your own outdoor space.

Register today at www.bawsca.org. or call 650-349-3000.

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  - Creating Healthy Soil
- Alternatives to Lawn
- Habitat Gardening
- Edible Landscaping
- Water-Efficient Irrigation Practices
- Parent/Child Gardening Activities

Enjoy a self-guided tour and learn about how you can easily create a sustainable landscape in your own yard.

These two gardens showcase the basic principles of sustainable home landscaping. The gardens are designed to help you envision how you might apply these principles in your own yard.

The tour starts at Sign #1 to your right. Envision that you are entering the front yard of a home at the place marked with this arrow on the map. As you proceed, you will encounter meandering pathways that culminate in a rectangular area that represents a patio.

Fact sheets on sustainable landscaping and design concept sheets that show ideas for various sizes and shapes of yards, are available for you to take home. You can find these at the Guadalupe River Park Conservancy Visitor Center at 438 Coleman Avenue, San José.

To learn more on this project, visit www.sanjoseca.gov/esd/stormwater/pesticides.asp

Directions

From Highway 87 exit southwest on West Taylor Street toward Coleman Avenue. Turn left onto Walnut Street and then turn left into the Seymour Street parking lot.

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California Department of Pesticide Regulation

GUADALUPE RIVER PARK CONSERVANCY

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Acknowledgement of support

- Santa Clara Valley Water District's Landscape Rebate Program
- Zanker Recycling for providing recycled mulch
- Pacific Interlocking for providing permeable pavers

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Self-Guided Tour

GREEN GARDENS
HEALTHY CREEKS

Nature's Inspiration Gardens

Guadalupe Courtyard Garden Park, San José

© 2003 Christopher L. Christie

Nature's Inspiration Gardens

1 Cardboard Works as a Weed Barrier
A layer of cardboard is used underneath the mulch to prevent weeds. Learn more about sheet mulching here.

2 Mulch Recreates the Forest Floor
The soil is covered with a 3-inch mulch layer. Learn more about mulches here.

3 Slow the Flow of Rainwater
Permeable hardscape surfaces in these pathways allow rainwater to trickle through and soak into the soil. Learn about permeable pavers here.

4 Healthy Soil Makes Healthy Plants
Healthy soil creates healthy plants that are able to fight off weeds and diseases better. Learn how to make healthy soil here.

5 Nourishment Comes Naturally
Avoid routine fertilizing with fast-acting synthetic fertilizers as these have many negative consequences. Learn more here.

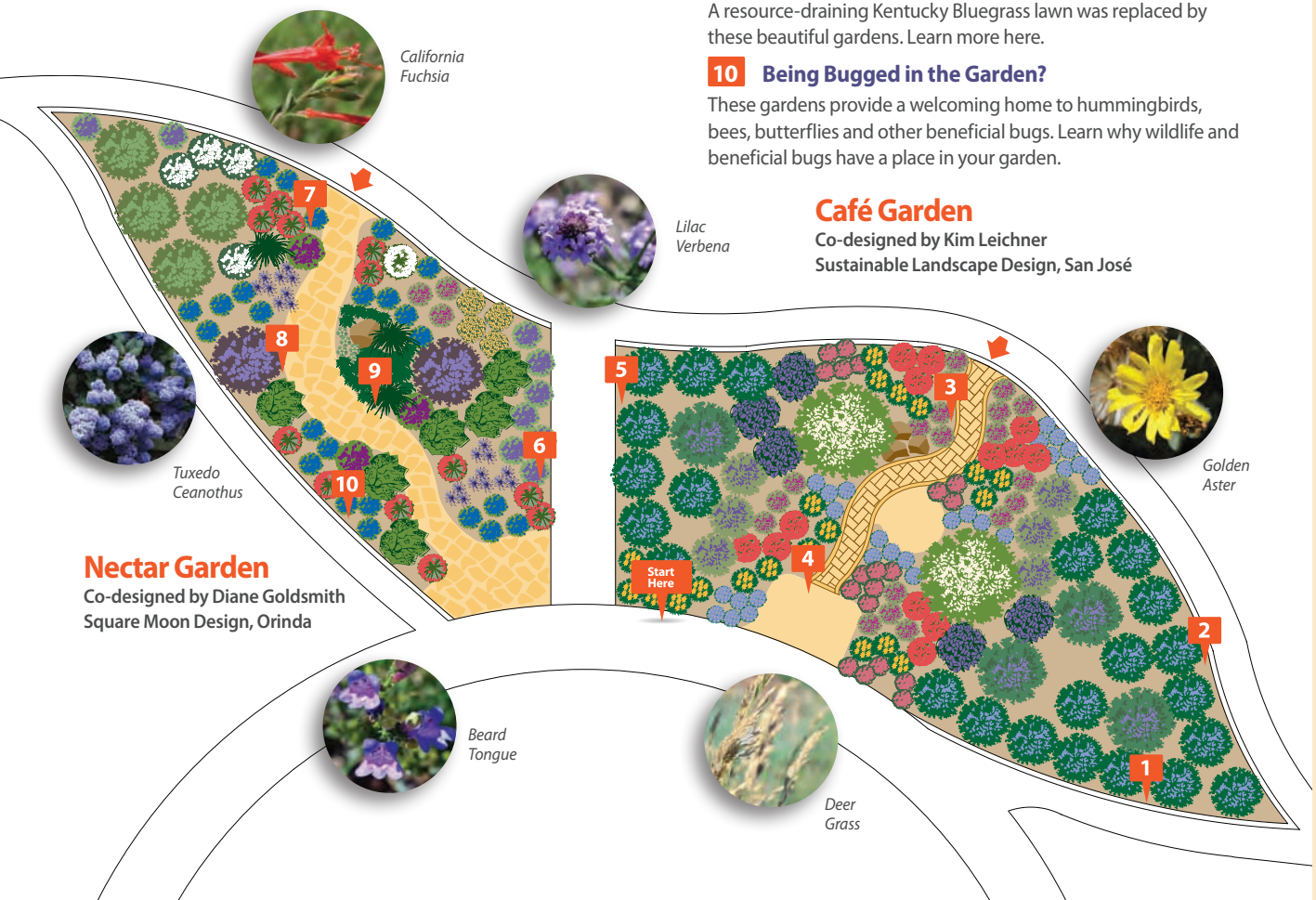
6 Right Plant in the Right Place
The plants in these gardens are deliberately spaced away from each other. Learn the importance of plant spacing here.

7 This Watering System Delivers
Sprinklers were replaced with a drip irrigation system in these gardens. Learn how drip irrigation can contribute to plant health here.

8 Connect to the Ecosystem with Native Plants
All plants selected for these gardens are native to California. Learn the reasons for selecting California native plants here.

9 What was Here Before?
A resource-draining Kentucky Bluegrass lawn was replaced by these beautiful gardens. Learn more here.

10 Being Bugged in the Garden?
These gardens provide a welcoming home to hummingbirds, bees, butterflies and other beneficial bugs. Learn why wildlife and beneficial bugs have a place in your garden.



Café Garden
Co-designed by Kim Leichner
Sustainable Landscape Design, San José

Nectar Garden
Co-designed by Diane Goldsmith
Square Moon Design, Orinda

Nectar Garden Plant List

Symbol	Botanical Name	Common Name
	Arctostaphylos edmundsii parvifolium	Pacific Mist Manzanita
	Ceanothus x 'Tuxedo'	Tuxedo Ceanothus
	Rhamnus californica 'Mound San Bruno'	Coffeeberry
	Eriogonum fasciculatum	California Buckwheat
	Epilobium canum 'Cloverdale'	California Fuchsia
	Penstemon heterophyllus 'Blue Springs'	Beard Tongue
	Salvia sonomensis	Creeping Sage
	Mimulus 'Eleanor'	Sticky Monkeyflower
	Muhlenbergia rigens	Deer Grass
	Iris munzii	Tulare Lavender Iris
	Verbena lilicina	Lilac Verbena
	Eriogonum giganteum	St. Catherine's Lace
	Penstemon heterophyllus 'Margarita Bop'	Beard Tongue
	Dudleya pulverulenta	Dudleya
	Festuca idahoensis	Idaho Fescue

Café Garden Plant List

Symbol	Botanical Name	Common Name
	Ceanothus thyrsiflorus 'Snow Flurry'	Wild Lilac
	Ceanothus gloriosus 'Anchor Bay'	Point Reyes Ceanothus
	Ceanothus thyrsiflorus 'Skylark'	California Lilac
	Salvia clevelandii	Cleveland Sage
	Salvia leucophylla	Purple Sage
	Epilobium canum canum	California Fuchsia
	Penstemon heterophyllus 'Margarita Bop'	Beard Tongue
	Heterotheca villosa	Golden Aster
	Erigeron glaucas 'Wayne Roderick'	Seaside Daisy
	Eriogonum grande var. rubescens	Rosy Buckwheat

Nature's Inspiration Gardens Tour Script

Begin at the Overview Sign located in the Café Garden

- Explain **traditional landscaping** versus **sustainable landscaping**.
- A **traditional landscape** consumes pesticides, herbicides, fertilizers, and gasoline for maintenance equipment and hauling green waste. It's irrigation system may waste water and transport landscaping chemicals, soil, and trash into storm drains and urban streams.
- A **sustainable landscape** lives in harmony with nature and requires less maintenance. By creating a sustainable landscape, you are helping to protect Santa Clara Valley's environment one yard at a time.
- Describe how the Nature's Inspiration Gardens provide design examples for ornamental gardens suitable for residential yards and/or gardens (i.e., Café and Nectar Gardens). Garden concept designs for these gardens are available online.
- The gardens demonstrate various landscaping principles used to create sustainable yards. Highlight design, construction, and maintenance sustainable tips for their gardens – basic sustainable gardening principles:

    1. **How Cardboard Works as a Weed Barrier**
    2. **How Mulch Recreates the Forest Floor**
    3. **How to Slow the Flow of Rainwater**
    4. **How Healthy Soil Makes Healthy Plants**
    5. **How Nourishment Comes Naturally**
    6. **Fertilize Responsibly**
    7. **Right Plant in the Right Place**
    8. **This Watering System Delivers**
    9. **Connect to the Ecosystem with Native Plants**

- Describe Integrated Pest Management (IPM)

It is a series of pest management evaluations, decisions, and controls. In practicing IPM, gardeners who are aware of the potential for pest infestation follow a four-tiered approach. The four steps include:

1. **Set Action Thresholds (What levels of pests are tolerable?)**
2. **Monitor and Identify Pests (Removes the possibility that pesticides will be used when they are not really needed.)**

3. **Prevention (Design out weeds and pests using the principles demonstrated in the Gardens.)**
4. **Control (Using least-toxic methods first, e.g., mechanical removal of weeds before chemical controls.)**

Sign 1: How Cardboard Works as a Weed Barrier (Café Garden)

Explain the sheet mulching process and how it works.

If available, show photos of this site when it was sheet mulched before construction.

Sign 2: How Mulch Recreates the Forest Floor (Café Garden)

Explain the benefits of mulch as a weed prevention tool.

Explain how it helps soil health and water conservation.

Explain how to purchase and maintain mulch.

Explain how to mulch near a tree basin.

Sign 3: How to Slow the Flow of Rainwater (Café Garden)

Explain the urban run-off issues and benefits of retaining rainwater onsite.

Explain how pervious pavers work and how they can be used.

Explain the other examples of pervious hardscapes (decomposed granite, pervious concrete, recycled concrete, flagstone paving).

Explain additional methods of retaining rainwater and slowing runoff on-site (e.g., rain barrels, mulch, wattles).

Explain about pervious concrete as a method of infiltrating rainwater.

Explain how homeowners can use concrete blocks from their own site to create pervious paving at a very low cost.

Explain other methods such as diverting rain from an impervious to a pervious surface (show photos) and rain barrels.

Sign 4: How Healthy Soil Makes Healthy Plants (Café Garden)

Explain why healthy soil is the basis for healthy, pest-tolerant plant growth.

Explain how compost can help change the soil characteristics and quality.

Explain how fertilizers are often redundant or misused and how they can negatively impact soil biology and stormwater quality.

Explain how to determine if your soil needs amendments (e.g., compost and mulch, grass clippings).

Sign 5: How Nourishment Comes Naturally (Café Garden)

Explain that the soils in the gardens were mixed with organic compost, not synthetic fertilizers.

Explain that natural landscapes self-fertilize with decomposed leaves and twigs.

Sign 6: Right Plant in the Right Place (Nectar Garden)

Explain the benefits of native plants. Many natives are drought-tolerant.

Explain how much water these plants consume (i.e., very little).

Explain that natives blossom into beautiful shapes and colors, but they must be selected wisely.

Explain how native plants need to be planted in such a way to grow to their full potential. Plants that do not have enough space to grow need to be pruned constantly, which adds unnecessary labor, green waste, and injury to the plant which increases its susceptibility to pest infestation.

Explain how to consider the mature size of plants and use a bubble diagram to ensure each plant has enough space for growth.

Explain where native plants can be purchased and how to maintain them (i.e., BAWSCA Workshop Trainings, www.bawsca.org).

Explain how sparse the garden looked when it was first planted (show photos).

Sign 7: This Watering System Delivers (Nectar Garden)

Explain the importance of a correctly programmed watering schedule to optimize garden health.

Explain how a correct watering schedule helps save water, energy, money, and time.

Explain hydrozoning (i.e., grouping plants with the same watering needs).

Explain how maintenance of irrigation equipment is important. Show examples of drip tubing (i.e., that is currently on site).

Explain the Santa Clara Valley Water District's rebate program for landscape conversion.

Sign 8: Connect to the Ecosystem with Native Plants (Nectar Garden)

Explain how native plants attract beneficial creatures and wildlife.

Explain how native plants are biological controls and they can naturally (without chemicals) address pest concerns.

Explain how native plants invite pollinating insects to the site.

Explain the natural annual cycles in a native garden (different flowering times, different appearances through the seasons, etc.)

Explain where native plants can be purchased and how to maintain them (i.e., BAWSCA Workshop Trainings, www.bawsca.org).

Sign 9: What was Here Before? (Nectar Garden)

- Explain that the gardens used to be traditional turf – Kentucky bluegrass – just like the rest of the site in the Courtyard Garden.
- Explain that the turf was irrigated with a traditional sprinkler system and maintained with synthetic fertilizers.

Sign 10: Being Bugged in the Garden? (Nectar Garden)

- These gardens use a variety of plants to provide homes to bees, butterflies, and other good bugs.

Don't Stop…

Refer residents to our online technical factsheet series that provides additional information about sustainable gardening practices:

- **Steps to Sustainable Garden Renovation**
- **Fertilize Responsibly**
- **Start with Healthy Soil**
- **Right Plant for the Right Place**
- **Water Wisely**
- **Mulch for Healthier Soil and Plants**
- **Compost for Healthy Soil and Plants**

Nature's Inspiration Gardens Website: http://www.sanjoseca.gov/index.aspx?NID=1512. Encourage use of the Quick Reference Code (QR Code) on the garden signage.

Nature's Inspiration Gardens Evaluation – Tour **Date:**

1. What were your goals for attending a tour of the Nature's Inspiration Gardens? (Please check all that apply)
   - ☐ To improve/change my garden landscaping
   - ☐ To learn about reducing pesticide/chemical use in my garden
   - ☐ To learn about gardening practices that protect the environment
   - ☐ Other _____

2. Did the tour increase your interest in this type of landscaping?

☐ **Yes** ☐ **No** ☐ **Somewhat**

3. How much did this tour increase your knowledge about the topic?

☐ **Not at all** ☐ **A little** ☐ **Somewhat** ☐ **A lot** ☐ **Significantly**

4. Did the tour meet your expectations? ☐ **Yes** ☐ **No** ☐ **Somewhat**

If no, please explain why.

_____

5. Are you more likely to adopt these practices in your garden? ☐ **Yes** ☐ **No** ☐ **I need to learn more**

6. Please rate your tour guide ☐ **Excellent** ☐ **Good** ☐ **Needs Improvement**

Comments:_____

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Comments:_____

BAWSCA
Bay Area Water Supply & Conservation Agency

2012 FALL Landscape Class Series

Class Name:_____

Date:_____

1) What were your goals for attending this class?

___To learn how to save money by reducing my water use

___To learn about water efficient practices to protect the environment

___To be better prepared for drought

___To improve my landscaping

2) The class description accurately reflected the content of the class:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

3) The instructor demonstrated knowledge of the topic and presented practical information you can use:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

4) This class has stimulated your interest in the class topic:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

5) The information provided in the class will help you reduce water consumption in your landscaping:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

6) How much did this class increase your knowledge about the topic?
___None ___ A little ___Somewhat ___A lot ___Significantly

7) The workshop was what you expected: ___Yes ___No If No, Why?

_____

8) What did you find most useful about the workshop?_____

_____

9) What topics would you suggest in the future?_____

_____

10) Please rate the logistical aspects of the workshop. Circle an opinion

Day:	Excellent	Good	Fair	Poor
Time:	Excellent	Good	Fair	Poor
Length:	Excellent	Good	Fair	Poor
Location:	Excellent	Good	Fair	Poor

11) Your overall rating of the class is: ___Excellent ___Good ___Fair ___Poor

12) How did you learn about the class?_____

13) What is your City of residence?_____

14) Additional Comments: _____

_____

15) You can provide your email address to receive future water-efficient landscaping information:

_____

BAWSCA
Bay Area Water Supply & Conservation Agency

2013 SPRING Landscape Class Series

Class Name:_____

Date:_____

1) What were your goals for attending this class?

___To learn how to save money by reducing my water use

___To learn about water efficient practices to protect the environment

___To be better prepared for drought

___To improve my landscaping

2) The class description accurately reflected the content of the class:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

3) The instructor demonstrated knowledge of the topic and presented practical information you can use:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

4) This class has stimulated your interest in the class topic:
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

5) The information provided in the class will help you reduce water consumption in your landscaping:
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14) Additional Comments: _____

_____

15) You can provide your email address to receive future water-efficient landscaping information:

_____