

**Greater Monterey County IRWM Region Implementation Grant Request, Round 2:
Summary of Projects**

Project (Implementing Agency/Project Title)	Abstract	Requested IRWM Funds	Matching Funds and Other State Funds	Total Project Cost
1. County of Monterey: San Lucas Water District Public Water Supply Project [DAC PROJECT]	The community of San Lucas is an impoverished, predominately Hispanic, farmworker village. Since March 2011 all customers of the San Lucas Water District have been on an indefinite “Do Not Drink” order from the Monterey County Division of Environmental Health (DEH) due to excessive levels of nitrates. In addition, the Regional Water Quality Control Board has been unable to certify approval of the District’s recently upgraded wastewater treatment and disposal system due to high TDS in the treated effluent, which is a direct result of high TDS in the community’s water source. As a result, the District cannot approve any new service connections to the sewer system until this issue is resolved. The proposed project will implement preparation of a Feasibility Study to evaluate all available feasible options for long-term solutions to the water supply problem and identify a Preferred Option. Preliminary engineering analysis of the Preferred Option will be completed, leading to preparation of a Project Description and a CEQA Initial Study. Upon completion of the CEQA process, final engineering plans, specifications, and bid documents will be completed and permits and rights-of-way will be obtained. The County and District will then advertise for bids and construct the project.	\$2,362,500	\$552,000	\$2,914,500
2. Pajaro/Sunny Mesa Community Services District: Springfield Water Project [DAC PROJECT]	Pajaro/Sunny Mesa Community Services District (PSMCD) is requesting funds for predevelopment costs to replace the water supply for the Springfield disadvantaged community in rural Monterey County. The Springfield water system is made up of 35 connections supplying water to about 165 low-income farmworkers in northern Monterey County. The system has exceeded the nitrate MCL since at least 1986; the current level of nitrates in the Springfield water system is 293 ppm. Engineering, geotechnical and hydrological studies are required to determine the feasibility of potential options under consideration to replace an existing drinking water well that has high nitrate levels and is at risk of seawater intrusion. The first option would include development of a new well, storage tank and associated distribution system. The second option would be to connect to the Moss Landing Water System to the south of the community. Environmental planning (CEQA), permitting and project coordination are included in the request. In addition to conceptual design and feasibility analysis, the goal is to develop plans and specifications for the selected project in preparation for construction bidding.	\$580,072	\$54,500	\$634,572
3. City of Salinas and Monterey Regional Water Pollution Control Agency: Dry Weather Runoff Diversion Program	This project proposes to divert dry weather urban polluted runoff from the City of Salinas and reclaim it for agricultural water supply. The project will lower pollution loads to the Salinas River and provide water supply to an area of Monterey County where seawater intrusion limits water supplies. Specifically, the project will divert dry weather urban surface water discharge from south Salinas into the City of Salinas’s Blanco Detention Basin, which will then be sent to the MRWPCA regional wastewater treatment plant. Water in the basin will settle and filter through the soil as a pretreatment, then flow into a junction point for transfer to the MRWPCA-operated conveyance system. Shoulder-season wet weather events could be similarly diverted. All	\$428,400	\$360,869	\$789,269

	diversions will reduce the amount of pollutants entering the Salinas River. Once reclaimed, diverted water could be used for dry-season water supply (e.g., as agricultural irrigation water). Another component of the proposed project will involve mining data from existing water quality sampling reports and/or analyses, possibly installing, operating and maintaining one or more flow meters and automatic water quality samplers.			
4. Resource Conservation District of Monterey County: Salinas River Watershed Invasive Non-native Plant Control and Restoration Program	Wildlife habitat, flood control and water availability on the Salinas River and its tributaries are compromised and threatened by invasive nonnative plants. Arundo is a nonnative aggressive perennial grass that has overtaken 1,869 acres of the Salinas River, forming enormous monocultures with virtually no food or habitat value for native wildlife. Arundo is also known to draw over three times as much water from the aquifer as native vegetation, increasing the likelihood of fire and flooding. Aerial GPS-linked photo reconnaissance of the Salinas River and several tributaries by the RCDMC in May 2011 identified tamarisk as another major invasive plant that is displacing native vegetation and actively migrating into the Salinas River from several tributaries. The project proposal is a 3-year stage of treatment (out of a 10+ year program) and will target arundo and tamarisk and other invasive weeds in the channel, floodplain and terraces of the Salinas River between King City and Soledad.	\$1,275,701	\$484,862	\$1,760,563
5. Resource Conservation District of Monterey County: Monterey County Farm Water Quality Assistance Program	The RCD of Monterey County, in close partnership with University of California Cooperative Extension Crop Advisors and USDA Natural Resources Conservation Service, will provide a bilingual on-farm erosion, irrigation, and nutrient management evaluation and BMP assistance program for Monterey County farmers. The service will: 1) evaluate erosion potential, irrigation system and application efficiency, and nutrient budgeting; 2) develop recommendations as needed for field configuration, soil stabilization, and refined water and nutrient applications; and 3) assist growers' voluntary implementation of those recommendations to help reduce excess soil, water and nutrient movement off area farms while optimizing farm productivity. This work is already underway on a smaller scale, and requested funding will support development of a full program for the next three years.	\$584,850	\$194,940	\$779,790
6. Ecology Action: Monterey Bay Green Gardener Training and Certification Program	The Monterey Bay Green Gardener Certification Program provides bilingual, hands-on training in ecological landscaping methods for landscaping industry professionals, public agency landscape maintenance staff, and home gardeners. Green Gardener 10-week certification-level course topics include efficient irrigation system design and management, applying mulches and compost to build the soil food web, improving water retention capacity of soil and preventing erosion, drought-tolerant plant selection and natural landscaping based on plant communities in a watershed, integrated pest and weed management strategies that reduce pesticide applications in the landscape, fertilization practices that protect water quality, and natural pruning and plant selection practices that reduce green waste and carbon emissions. The proposed project will expand Green Gardener training opportunities in the cities of Salinas, Soledad, and King City. Trainings will incorporate hands-on learning experiences through the construction of water-wise demonstration sites on both public and private properties. Ecological landscape practices reinforced at training demonstration sites include strategies for turf replacement with low-water use plants, irrigation system efficiency retrofits that achieve MWELo compliance, graywater irrigation design, installation and maintenance, and stormwater management with low-impact design methods.	\$40,873	\$13,631	\$54,504
7. Elkhorn Slough	"Ridgeline to Tideline" is a comprehensive approach to addressing water resource issues in an	\$1,613,226	\$3,173,000	\$4,786,226

<p>Foundation: Ridgeline to Tideline: Water Resource Conservation in Elkhorn Slough</p>	<p>estuarine watershed. The three stages of this project include: 1) planning, design, and environmental compliance for increasing tidal range and circulation in North Marsh, a part of the Slough with consistently poor water quality and greatly reduced estuarine function, and restoring an adjacent upland buffer; 2) acquiring adjacent farmland property that is a chronic source of Slough degradation; and 3) restoring a nearby marsh through the addition of sediment. Planning for increased tidal flushing in North Marsh will ultimately lead to improved water quality, flood protection, and habitat value in estuarine waters. Reduced groundwater extraction on adjacent farmland will improve water balance in the basin, resist seawater intrusion, prevent nitrate pollution and promote freshwater spring re-emergence. Requested funds will support improvement of tidal circulation through site evaluation, planning, evaluation of design alternatives, compilation of a restoration plan, 30% design and CEQA; and land acquisition through due diligence costs. These funds will also support restoration of buffer uplands at North Marsh and 7 acres of a nearby marsh through sediment addition.</p>			
<p>8. Central Coast Wetlands Group: Expansion of a Coastal Confluence Water Monitoring System</p>	<p>The cumulative results of water quality projects implemented through the Greater Monterey County IRWM Plan and through other efforts are expected to lead to improvements in the water quality of receiving waters. However, we currently do not have the robust monitoring system in place needed to successfully document these improvements. This project will provide the necessary data to quantify the effectiveness of the various water quality management efforts within priority watersheds of the Greater Monterey County region. The project will expand the coverage of the continuous LOBO (Land/Ocean Biogeochemical Observatory) buoy monitoring array to two additional priority coastal confluence locations that drain significant portions of the Salinas Valley. The LOBO technology is highly advanced with the ability to test and record water quality every hour. Additional nutrient monitoring equipment will be installed at the confluence of multiple sub-drainages in order to further document the cumulative effects of nutrient management strategies. The project will also provide synthesis and analysis of existing data to correlate to on-the-ground work.</p>	<p>\$644,247</p>	<p>\$232,960</p>	<p>\$877,207</p>
<p>9. Save Our Shores: Watershed Protection Program - Annual Coastal Cleanup Day in Monterey County</p>	<p>The Annual Coastal Cleanup Day (ACC) event is the largest volunteer event in the state. ACC is hosted internationally by the Ocean Conservancy, state-wide by the California Coastal Commission, and in Santa Cruz and Monterey Counties by Save Our Shores (SOS). This one-day cleanup event not only helps prevent ocean pollution by removing trash from local beaches and coastal rivers, but it is a highly publicized event that raises the public's awareness of marine pollution. In 2011, SOS coordinated over 200 cleanups and collected 38,000 pounds of trash. The requested IRWM grant funds will support three years of ACC for beaches and coastal rivers in Monterey County. This is being proposed as an interregional IRWM project. The project will provide important habitat improvements for coastal water systems as well as educational and recreational benefits for the Greater Monterey County, Pajaro River Watershed, and Monterey Peninsula, Carmel Bay, and South Monterey Bay IRWM regions.</p>	<p>\$37,800</p>	<p>\$12,600</p>	<p>\$50,400</p>
<p>TOTAL</p>		<p>\$7,567,669</p>	<p>\$5,079,362</p>	<p>\$12,647,031</p>

**Greater Monterey County IRWM Region Implementation Grant Request, Round 2:
Benefits to the Region**

Benefits	Benefits Provided from Projects
Water Supply	
Drinking Water	<ul style="list-style-type: none"> ▪ <i>County of Monterey “San Lucas Water District Public Water Supply”</i>: Urgently needed drinking water supplies will be provided for the disadvantaged farmworker community of San Lucas (south County). San Lucas Water District’s existing groundwater source does not meet primary water quality standards for potable water supplies due to ongoing nitrate and TDS contamination. ▪ <i>Pajaro/Sunny Mesa Community Services District “Springfield Water Project”</i>: Urgently needed drinking water supplies will be provided for a disadvantaged farmworker community in the Pajaro/Sunny Mesa district (north County). The Springfield water system has not met drinking water standards since at least 1986 due to excessive nitrates.
Groundwater	<ul style="list-style-type: none"> ▪ <i>RCD “Farm Water Quality Assistance”</i>: The project will help growers refine their application of nitrogen fertilizers and irrigation water with improved soil nitrate tracking and irrigation system and flow auditing, which will reduce the potential for leaching nitrates to groundwater. ▪ <i>Ecology Action “Green Gardener Training”</i>: Increased water conservation will be achieved through educational outreach to landscape industry professionals, municipal/school landscapers, and home gardeners. ▪ <i>Elkhorn Slough Foundation “Ridgeline to Tideline”</i>: Increased water conservation and groundwater recharge will be achieved through the acquisition and removal of approximately 95 acres of farmland from production. Reduced stormwater runoff from improved management practices will also enable increased infiltration and recharge into the underlying groundwater basin. ▪ <i>RCD “Invasive Non-native Plant Control”</i>: Groundwater uptake by non-native invasive plant species (particularly arundo, which has been known to draw as much as three times the amount of water from the aquifer as native vegetation) will be reduced in the Salinas River watershed.
Recycled Water	<ul style="list-style-type: none"> ▪ <i>City of Salinas/Monterey Regional Water Pollution Control Agency (MRWPCA) “Dry Weather Runoff Diversion”</i>: A potential new source of recycled water (from captured City of Salinas stormwater) may become available for agricultural use in the coastal region. This would help offset groundwater pumping in an area of critical overdraft and seawater intrusion. The project will also enable diversification of water supply sources by including a source not utilized in the past—stormwater from the City of Salinas—and optimizing conjunctive use.
Water Quality	
Surface Waters	<ul style="list-style-type: none"> ▪ <i>City of Salinas/MRWPCA “Dry Weather Runoff Diversion”</i>: Surface waters will be protected from contamination and the threat of contamination by diverting dry weather urban runoff to the regional wastewater treatment facility. ▪ <i>RCD “Farm Water Quality Assistance”</i>: The program will assist growers in identifying and implementing the on-farm practices necessary to meet their water conservation goals, especially in light of the new agricultural water quality regulations to protect surface waters and groundwater basins from contamination and the threat of contamination. ▪ <i>Ecology Action “Green Gardener Training”</i>: The program will help protect surface waters from contamination through reduced use of pesticides and soluble nitrogen fertilizers, and will improve the quality of urban runoff to surface waters. ▪ <i>RCD “Invasive Non-native Plant Control”</i>: Arundo treatment in the Salinas River watershed will reduce the potential for erosion and improve water quality in terms of reduced turbidity as well as any legacy pesticides that might be carried along in soils mobilized by streambank erosion. ▪ <i>Central Coast Wetlands Group “Regional Water Quality Monitoring Network”</i>: The project will enable project proponents, government agencies, and other decision makers to document the effectiveness of best management practices toward improving surface water quality, and to thereby make better use of future resources in implementing water quality protection projects (including agricultural best management practices and low impact development practices).

Groundwater	<ul style="list-style-type: none"> ▪ <i>RCD “Farm Water Quality Assistance”</i>: The project will help improve the quality of agricultural runoff through on-farm best management practices and thereby mitigate its effects in groundwater. ▪ <i>Ecology Action “Green Gardener Training”</i>: Laundry-to-landscape greywater irrigation system installations that result from Green Gardener workshops will protect groundwater quality by relieving stress on failing or poorly maintained septic system leach fields in households that may not be able to afford constructing an alternate leach field. Reduced pesticide and soluble nitrogen fertilizer use in landscaping practices will also help protect the underlying aquifers. ▪ <i>Elkhorn Slough Foundation “Ridgeline to Tideline”</i>: Reduced fertilizer applications on an acquired farm parcel in Elkhorn Slough will reduce the risk of groundwater contamination by nitrates; reduced groundwater pumping on the acquired farmland will help prevent seawater intrusion; and retirement of farm fields on steep slopes and more efficient management of remaining farm fields will significantly reduce major sources of erosion in the Elkhorn Slough watershed. ▪ <i>County of Monterey “San Lucas Water District Public Water Supply”</i>: Improvement of the municipal water source in San Lucas will result in improved wastewater effluent quality (reduced TDS), which will in turn help protect the groundwater resource.
Estuarine Waters	<ul style="list-style-type: none"> ▪ <i>Elkhorn Slough Foundation “Ridgeline to Tideline”</i>: Land acquisition and improved farm management in the Elkhorn Slough area will improve surface water quality in downhill estuarine habitat. The project will establish tidal marsh in areas presently occupied by intertidal mudflats; the restored marsh will retain carbon in the soil, reducing the high rates of decomposition that lead to low dissolved oxygen concentrations. Tidal marsh is also associated with increased rates of denitrification and higher sedimentation rates. These processes improve water quality directly by reducing the concentration of nitrate in the water column and making water in the slough clearer and more hospitable for native eelgrass.
Coastal Waters	<ul style="list-style-type: none"> ▪ The <u>cumulative surface water quality benefits</u> achieved through the projects in this proposal will result in improved coastal water quality downstream, in the Monterey Bay National Marine Sanctuary. ▪ <i>Save Our Shores “Coastal Cleanup Day”</i>: By removing litter along with associated contaminants in coastal rivers and on beaches, the project will help improve the quality of coastal waters.

Environment

Improved Habitat and Ecosystem Functioning	<ul style="list-style-type: none"> ▪ <i>Elkhorn Slough Foundation “Ridgeline to Tideline”</i>: The project will directly restore salt marsh in Elkhorn Slough. Over the last 150 years approximately 50% of Elkhorn’s marshes have been lost due to human modifications, and their restoration is critical for the long-term health of the estuary. Raising the marsh elevation in lower Elkhorn Slough will reduce the volume of water moving in and out of the estuary each day, decreasing the system’s overall tidal prism and helping to reduce erosion of the slough’s benthic habitats and tidal creeks. This project is also a first step to recovering critical habitat for special status species, including the federally endangered California clapper rail and the federally threatened southern sea otter. Farm acquisition and improved land management will significantly reduce sedimentation into North Marsh wetlands; several acres of estuarine marsh in the project area have been buried up to 10 feet deep by past sedimentation. Habitat restoration in the uplands above North Marsh will restore rare marsh-to-upland ecotone habitat, and will significantly reduce the abundance of non-native iceplant. ▪ <i>RCD “Invasive Non-native Plant Control”</i>: Arundo treatment and native vegetation recruitment and restoration will directly improve the river and tributary stream ecology, including improved habitat for threatened steelhead trout and reduced bank erosion and associated downstream sedimentation. ▪ <i>Ecology Action “Green Gardener Training”</i>: The Green Gardener training helps protect environmental resources by reducing adverse impacts of sedimentation into streams, reducing the use of pesticides and nitrate fertilizers, and preventing and controlling invasive species in landscapes. ▪ <i>RCD “Farm Water Quality Assistance”</i>: Water quality protection practices taught on-farm benefit downstream habitat for state and federally listed species by reducing their potential for exposure to agrichemicals and associated biological effects in runoff, and reducing sedimentation of downstream habitat.
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	<ul style="list-style-type: none"> ▪ <i>Save Our Shores “Coastal Cleanup Day”</i>: The project will protect and enhance state and federally listed species and their habitats through the annual river cleanups, which will result in improved habitat for steelhead and other threatened species by removal of debris. Ocean health will also be improved due to a reduction in the amount of marine debris in the ocean, thus protecting and enhancing the habitat of endangered and threatened marine species in the Monterey Bay National Marine Sanctuary.
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Flood Control and Floodplain Management

Flood Control	<ul style="list-style-type: none"> ▪ <i>RCD “Invasive Non-native Plant Control”</i>: Arundo, while either standing or as rafts of rhizomes and stalks, impedes high water flows, exacerbating potential for flooding of adjacent lands as well as forming debris dams at bridges and other river-crossing structures. Arundo treatment will help limit this potential in reaches of river that are particularly choked with the weed. In addition, by removing potential flow constrictions and barriers posed by arundo, the project supports management of flood waters so that they do not contaminate fresh produce in fields adjacent to the Salinas River. ▪ <i>Elkhorn Slough Foundation “Ridgeline to Tideline”</i>: Farm fields on steep slopes will be retired and erosion control practices will be improved on the project site, which will result in reduced agricultural/flood runoff during storms and will protect a public road from sedimentation. In addition, marsh restoration will provide some flood protection for adjacent upland property: water flows are significantly dampened as they pass through salt marsh plants, and thus marsh plains can provide adjacent uplands with protection against coast flooding and wave erosion. The sediment for marsh restoration is being provided by Pajaro River Bench Excavation Project, which will provide a beneficial reuse of that sediment and assist Santa Cruz County flood control efforts. ▪ <i>RCD “Farm Water Quality Assistance”</i>: The project supports flood protection on a localized scale by supporting the development and implementation of farm-by-farm runoff management practices that will reduce downstream flooding and sedimentation. On-farm runoff management practices serve to protect on-farm and downstream infrastructure and property from flood damage, including prevention of flooding and associated contamination of downstream produce fields. ▪ <i>Ecology Action “Green Gardener Training”</i>: Green Gardener low impact development (LID) workshops promote projects and practices to protect infrastructure and property from flood damage, and educate the public about methods that residents can implement to slow the flow of stormwater and reduce downstream flooding in their neighborhoods. ▪ <i>Central Coast Wetlands Group “Regional Water Quality Monitoring Network”</i>: This monitoring project will include flow metering that will quantify real time flow measurements that can be made available online for multiple users. Real time flow at coastal confluence and the resulting loading data will help IRWM Plan partners in the Greater Monterey County region to improve their understanding of watershed processes and better model rainfall driven flow patterns of these drainages. ▪ <i>County of Monterey “San Lucas Water District Public Water Supply”</i>: The project will be engineered to protect the San Lucas municipal water supply from potential effects of flooding in Salinas River.
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Climate Change

Water Supply Reliability	<ul style="list-style-type: none"> ▪ <i>County of Monterey “San Lucas Water District Public Water Supply”</i>: The community of San Lucas presently has no emergency drinking water source due to nitrate contamination of its existing well. The proposed project will provide this and help create a more reliable drinking water supply for the community. ▪ <i>Pajaro/Sunny Mesa Community Services District “Springfield Water Project”</i>: The water supply system is currently on demand status without storage and the well is located in a flood prone area. This leaves residents vulnerable to water shortages during electrical outages and flood events. Proposed construction of a storage tank and new distribution system will make the community more resilient to disruptive events and will provide a more reliable water supply. ▪ <i>RCD “Invasive Non-native Plant Control”</i>: Treating arundo in the Salinas River watershed will result in more water available for groundwater recharge and in-stream flow, promoting water conservation within the wild landscape to reduce drought stress in other systems (water to be pumped for human use, native vegetation and in-stream habitat), potentially enhancing the system’s flexibility to respond to or accommodate potential climate change impacts of warming and associated increased evapotranspiration rates (environmental and agricultural water needs).
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	<ul style="list-style-type: none"> ▪ <i>RCD “Farm Water Quality Assistance”</i>: Assisting growers with water conservation will give them flexibility in dealing with changing water supplies and demands associated with climate change. ▪ <i>Ecology Action “Green Gardener Training”</i>: Green Gardeners are trained to plan landscape design and maintenance around the potential impacts of future climate change, including increased storm intensity, drought conditions leading to mandatory water restrictions for landscaping, and increased costs of both water and fuel for landscaping equipment. The Green Gardener Certification Program contributes to mitigating climate change impacts by educating landscape professionals and home gardeners about best management practices that reduce landscape water use. ▪ <i>City of Salinas/MRWPCA “Dry Weather Runoff Diversion”</i>: The project will result in a potential new source of recycled water—from captured City of Salinas stormwater—for agricultural irrigation in the coastal region. This will help offset groundwater pumping in an area of critical overdraft and seawater intrusion, and help provide a more reliable source of water for agriculture. The project will also enable diversification of water supply sources by including a source not utilized in the past—stormwater from the City of Salinas—and optimizing conjunctive use.
Protection against Sea Level Rise	<ul style="list-style-type: none"> ▪ <i>Central Coast Wetlands Group “Regional Water Quality Monitoring Network”</i>: The project will include two coastal confluence monitoring stations that will continuously measure critical data necessary to track early warning signs of climate change. These monitoring stations will quantify water elevation, flow rates and direction, salinity and temperature—all data needed to respond to the future coastal inundation of the Salinas Valley that is described in the IRWM Plan. Future actions to minimize inland flooding will require these data in order to appropriately design tide gates and other control structure to ensure proper function while protecting other wetland and aquatic resources. ▪ <i>Elkhorn Slough Foundation “Ridgeline to Tideline”</i>: Planning for North Marsh improvements will include designs to protect sensitive wetland habitat and transportation infrastructure from predicted sea level rise. The marsh restoration portion of this project helps ensure longevity of Elkhorn Slough’s fragile salt marshes by increasing their resilience to climate change. The project will be designed to raise wetland elevations to a level appropriate to withstand predicted sea level rise in order to prevent marsh drowning. In addition, mudflats provide less erosion protection for uplands against wind waves and storm surges; restoring the existing mudflats to tidal marsh will help sustain the wetland and upland landscapes of Elkhorn Slough into the future.
Reduced GHG Emissions	<ul style="list-style-type: none"> ▪ <i>RCD “Farm Water Quality Assistance”</i>: Assisting growers with water conservation will enable them to reduce their energy use associated with water pumping. ▪ <i>Pajaro/Sunny Mesa Community Services District “Springfield Water Project”</i>: The project will reduce future GHG emissions by the district. The newer pumps and construction of a new gravity fed system will be more energy efficient and will emit less gas. ▪ <i>Ecology Action “Green Gardener Training”</i>: Graduates of the program achieve GHG reductions associated with groundwater pumping and conveyance of treated water by replacing lawns and high water use landscapes with drought tolerant plants, retrofitting inefficient irrigation systems, and installing alternative water supplies for landscape irrigation such as graywater and rainwater harvesting systems. Graduates reduce GHG emissions by their industry by discontinuing the use of 2-stroke motorized equipment and replacing inefficient equipment with either newer 4-stroke models that meet EPA Clean Air Act standards, electric models, or using manual equipment. Green Gardener graduates market services that conserve fossil fuel use in the form of on-site composting of green waste and the use and transport of locally recycled mulch and compost.