

**Garcia and Associates
Environmental Management System & Tracking**

Green Plan

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Garcia and Associates' "Green Plan"

Garcia and Associates (GANDA) recognizes its responsibility to reduce its carbon footprint throughout the company's widespread operations, and initiated a formal program in 2011 to identify and work toward reducing its direct environmental impacts. Prior to establishing the program, GANDA had implemented a number of measures that have contributed to minimizing our carbon footprint, including telecommuting, establishing offices near key groups of employees to reduce commutes, and associated energy consumption and emissions.

In early 2012, GANDA prepared a draft Green Plan, which it revised and formalized in the latter half of the year. The plan lays out GANDA's Environmental Green Stewardship policy statement, and is composed of two elements: Management Actions Items which, once implemented, will reduce environmental impacts, and implementation of an Environmental Management and Tracking System (EMTS) under which use is tracked against established goals.

The objectives of this 2014 plan revision are:

- 1) Update status on implementing management action items identified in the initial plan
- 2) Identify additional action items for the short, medium and long term
- 3) Report results of actual reductions measured against goals under the EMTS
- 4) Establish new/revised goals for the next two-year tracking cycle of the EMTS
- 5) Implement the EMTS at GANDA's Oakland office

Description of GANDA's Operations

GANDA provides environmental consulting services to a range of public, private and utility customers; our areas of expertise include biology, archaeology, architectural history and environmental planning. Our work is conducted both in an office setting (administrative support and technical), and in the field where our cultural and natural resource specialists conduct surveys, monitor construction and perform related professional services.

GANDA has permanent offices throughout California, with multiple offices in the Greater Bay Area that reduce commute times as well as transport times for meetings with clients, and additional full-service offices in Bozeman, Montana, Kaiua, Hawaii, and Tumon, Guam. Additional permanent employees work from home offices in California and Portland, Oregon. GANDA also has a steady pool of project hires who do not directly report to a GANDA office.

Environmental impacts directly related to our core business include:

From offices:

- Electricity use—office machines, computers, HVAC, lighting, kitchen appliances
- Gas use – heating elements in some offices
- Water use—toilets, sinks, drinking water, and irrigation (in a subset of our office locations)
- Gasoline use – employee commutes to/from offices

From field operations:

- Personal and company vehicles driving to project locations and on site
- Field equipment (nominal electric usage, batteries)
- Motor boat (used periodically on some projects)

Table 1. Location of Garcia and Associates' Full-Service Offices

Office Location	Address	Sq. Footage	Owned/Leased	Approximate No. of Employees
Within PG&E's Service Territory				
San Anselmo, CA	1 Saunders Ave., San Anselmo, CA 94960	4,020	Owned	20
Auburn, CA	435 Lincoln Way, Auburn, CA 95603	2,250	Owned	10
Oakland, CA	1512 Franklin St., Ste. 100, Oakland, CA 94612	4,200 (expanded from 3,000 January 2014)	Owned (purchased August 2013)	20
San Francisco, CA	2601 Mission St., Ste. 600, San Francisco, CA 94110	2,119	Leased	10
Lompoc, CA	104 S. C St., Ste. G, Lompoc, CA 93436	1,450	Leased	8
Outside of PG&E's Service Territory				
Oceanside, CA	516 Civic Center Dr., Oceanside, CA 92054	1,520	Leased	5
Los Angeles, CA	7474 N. Figueroa St., Ste. 200, Los Angeles, CA 90041	150	Leased	1
Bozeman, MT	1716 W. Main St., Ste. 8F, Bozeman, MT 59715	1,700	Owned	8
Kailua, HI	146 Hekili St., Ste. 101, Kailua, HI 96734	1,238	Leased	12
Tumon, Guam	800 Pale San Vitores Rd., H302, Tumon, Guam 96913	150 est.	Leased	2

GANDA's Environmental Green Stewardship Policy and Planning Elements

Garcia and Associates has made it a key company policy and guiding philosophy to do our part in helping to protect the environment by limiting waste and energy use in our offices and in the field.

The mantra “reduce/reuse/recycle” forms the backbone of GANDA’s policy whenever possible and feasible. This concept shall influence decision making, and be implemented at all levels of the organization, in a variety of areas:

- Purchasing new equipment
- Standardizing operating procedures regarding energy usage, vehicle usage, water usage, and recycling/waste reduction, within offices and for field operations
- Conducting scheduled energy- and water-use audits to identify and correct variances from target usage
- Ensuring regular maintenance and repairs are conducted to maintain peak performance of equipment, appliances and facilities.
- Training new employees in applicable policy elements
- Encouraging and implementing employee suggestions for reducing environmental impacts.

Management Action Items

GANDA initiated efforts in mid-2011 to identify and reduce its carbon footprint. We identified those actions that could be reasonably undertaken to produce the greatest “bang for our buck.”

Key elements of this assessment were:

- Field trucks and boats have the largest impact on Scope 1 GHG emissions¹
- Full-service offices have the largest impact on Scope 2 GHG emissions², energy consumption, water use, and waste generation
- Field operations have the highest potential to result in environmental compliance violations

Other determinations of this assessment included:

- GANDA has more control over the usage and implementation of measures for office facilities the company owns.
- A greater impact can be achieved by focusing on larger offices with the greatest number of employees reporting in on a daily or regular basis (impact areas: GHG Scope 2, energy consumption, water use, waste generation, and methods of commuting to/from work)
- GHG emissions (Scope 2) and energy usage are essentially the same for GANDA since our offices have little or no natural gas consumption (e.g., HVAC and water heater units are electric-fired).

Based on this assessment, GANDA management agreed upon the following short-, medium-, and long-term action items. The status of implementation during our first assessment period (July 1, 2011 – June 30, 2013) is indicated in red after each item.

Short term (<6 months, starting July 1st, 2011):

- Have utility representatives conduct energy- and water-use audits. [COMPLETED]
- Implement readily-available technologies in owned facilities based on these audits’ recommendations. [INSTALLED/IN OPERATION]
 - Energy-efficient light bulbs
 - Low-flow toilets

¹ Direct greenhouse gas (GHG) emissions, i.e., emissions from sources owned or operated by GANDA (vehicles).

² GHG emissions derived from the generation of electricity purchased by GANDA.

- Low-flow faucet emitters
- Timers on irrigation devices
- HVAC controls
- Formalize a policy to purchase Energy Star equipment for all new purchases. [IN PROGRESS]

Medium term (< 2 years, starting July 1st, 2011):

- Install Solar PV system on the San Anselmo, CA office building. [INSTALLED/IN OPERATION]
- Install energy-efficient lighting in the San Anselmo, CA office building. [INSTALLED/IN OPERATION]
- Conduct an energy retrofit analysis of the Auburn, CA office building to determine the most effective means for reducing energy usage (e.g., upgrading HVAC, installing PV, and upgrading lighting systems). [ASSESSMENT SHOWED SOLAR NOT VIABLE AT AUBURN]
- Conduct bimonthly evaluations of utility (electric, gas, water, waste removal) and bottled water bills. [IN OPERATION]
- Conduct quarterly analyses of vehicle logs to calculate total GHG emissions. [IN OPERATION]
- Replace aging truck fleet with more fuel-efficient vehicles. [IN OPERATION]

Long term (< 5 years, starting July 1st, 2011):

- Continue to replace aging truck fleet with hybrids, or other highly fuel-efficient vehicles (this will be dependent upon advances in off-road capabilities, since field staff are often in remote, harsh conditions).
- Continue to conduct energy retrofit analyses for other GANDA-owned office buildings to determine the most effective means for reducing energy usage (e.g., upgrading HVAC, installing PV, upgrading lighting systems).
- Others to be determined.

Additional Action Items for the Current Three-year Assessment Period (July 1, 2013 – June 30, 2016):

Short term (<6 months, starting July 1st, 2013):

- Install double-paned windows in the Oakland, CA office building. [INSTALLED]
- Replace aging gas-electric AC system HVAC with a newer, more efficient unit. [INSTALLED]
- Coordinate with Auburn water utility to analyze water usage and identify measures to reduce high water usage (leak detection/correction, landscape/irrigation modifications, etc.).
- Formalize a policy to purchase Energy Star equipment for all new purchases.

Medium term (< 2 years, starting July 1st, 2013):

- Conduct an energy retrofit analysis of the Auburn, CA office building to determine the most effective means for reducing energy usage (e.g., upgrading HVAC, installing PV, and upgrading lighting systems).
- Conduct an energy retrofit analysis for the newly-acquired Oakland office building to determine additional means for reducing energy usage (e.g., upgrading HVAC, installing PV, upgrading lighting systems). *Note: some short-term action items have already been identified and completed for this building.*

Long term (< 5 years, starting July 1st, 2013):

[The long-term items identified in the initial plan document are still valid action items for this plan revision.]

Identification of short, medium, and long term action items is ongoing and will be informed by advances in technology, reductions in costs (LEDs are still prohibitive, for instance), and negotiations with landlords for facilities leased by GANDA.

Environmental Management and Tracking System

In addition to identifying action items to be carried out in the short, medium, and long term, GANDA established an environmental management and tracking system (EMTS) in order to track and voluntarily reduce consumption in key environmental impact areas within the organization:

- Greenhouse gas emissions derived from vehicle usage (Scope 1 GHG emissions)
- Greenhouse gas emissions derived from the generation of purchased electricity (Scope 2 GHG emissions)
- Energy usage (electricity and natural gas)
- Water usage
- Waste reduction
- Regulatory and legal compliance

As part of establishing the EMTS, we calculated baseline usage in the impact areas for the period July 1, 2010 to June 30, 2011 to enable us to set voluntary reduction goals for all but waste reduction for the two-year period covering July 1, 2011 through June 30, 2013, and then track our performance for this two-year period.

We have since completed the first two-year tracking period. The results, by impact area, are provided in Table 2. GANDA exceeded its voluntary goals in all impact areas where goals were established.

Table 2. Summary of Goals and Results

Plan Element	Performance Period Reduction Goal	Results for Two-Year Performance Period ending 6/30/13
Scope 1 GHG Emissions (from GANDA vehicles)	2% reduction in Pounds GHG/vehicle-day	-4.50% (reduction)
Scope 2 GHG Emissions (from purchased electricity)	5% reduction in avg. lbs GHG/day	-21.16% (reduction)
Energy Usage	Composite 5% reduction in CO2 emissions from kWh and therms	-20.94% kWh (reduction) -33.78% therms (reduction)
Water Usage	3% reduction in avg. CCFs/day	-24.86% (reduction)
Waste Reduction	1% reduction annual lbs waste/recycling	N/A (no goal established for this period)

Plan Element	Performance Period Reduction Goal	Results for Two-Year Performance Period ending 6/30/13
Regulatory and Legal Compliance	No notices of violations, permit non-compliances, reportable spills, or assessed monetary fines or penalties	Meeting goal (zero instances of non-regulatory or legal compliance).

Under this plan revision, we have committed to the following:

- Targeting the same reduction goals for GHG (Scopes 1 and 2), Energy Usage, Water Usage and regulatory and legal compliance against a new base year of July 1, 2012 through June 30, 2013
- Implementing our goal for waste reduction
- Including the Oakland office in collections and calculations of energy, water and waste

Following is a description of each of the impact areas and target goals for the current three-year assessment period.

Greenhouse Gas (GHG) Emissions

GANDA Vehicles (Scope 1 GHG Emissions)

GANDA has committed to reducing GHG emissions from vehicles by 2 percent (2%) during the assessment period commencing July 1, 2013 and ending June 30, 2016. Scope 1 GHG emissions related to our vehicle fleet will continue to be calculated on a quarterly basis using a values provided by the EPA for vehicle make, model and year. A spreadsheet tracks start-stop mileage from GANDA’s vehicle fleet logs and determines the resulting GHG emissions for the fleet. Metrics such as per vehicle emissions, daily and total emissions, and other relevant data are tracked, trended and reported. Reductions will be calculated based on comparison to the new baseline period of July 1, 2012 to June 30, 2013.

Electricity Purchased by GANDA (Scope 2 GHG Emissions) and Energy Usage

Our Green Plan also contains goals for reducing Scope 2 GHG emissions (indirect GHG emissions based on the generation mix of the electricity we purchase) and energy usage. In GANDA’s case, Scope 2 GHG emissions and Energy Usage are closely related since our facilities and operations have minimal natural gas usage. Therefore, GANDA has the same goal for these two indices, but slightly different tracking methods for each.

GANDA has committed to reducing its energy usage in its San Anselmo, Oakland and Auburn offices by 5 percent (5%) during the assessment period commencing July 1, 2013, and ending June 30, 2016. After we have collected baseline data for the newly-acquired Oakland office building, we will revisit this goal to include the Oakland office.

Scope 2 GHG emissions for GANDA’s San Anselmo, Oakland and Auburn offices will continue to be calculated on a monthly basis by converting kilowatt hours (KWh) provided on the utility bills to a carbon dioxide equivalent (CO₂e). This is achieved by multiplying total KWh per office by the emissions

factor provided by PG&E for each reporting office. The resulting calculations will be compared against the new base period (July 1, 2012 through June 30, 2013) to enable us to better understand our Scope 2 GHG emissions and make appropriate changes. The Oakland office has been examined and values for the new base year have been established.

In order to track *energy usage*, we will continue to monitor and evaluate utility bills on a monthly basis for the San Anselmo and Auburn offices and compare against the new base period. Natural gas usage is fairly nominal in our operations (mostly for heating); nevertheless, we will continue monitoring our usage in order to see if we can identify means for reducing natural gas usage as well. As with Scope 2 GHG emissions, we will now be collecting baseline energy usage data for the Oakland building.

Water Usage

GANDA has committed to reducing its water usage in its San Anselmo, Oakland and Auburn, CA, offices by 3 percent (3%) during the assessment period commencing July 1, 2013 and ending June 30, 2016. The reduction achieved can be determined by calculating the total water usage for these two GANDA-owned buildings from the baseline period of July 1, 2012 to June 30, 2013 and trending against a comparable reporting period during the assessment period. Oakland, while included in the assessment period beginning in July 2013, does not have water use data for the base year. However, it is being evaluated in the aggregate, making our reduction goals more challenging to achieve.

Waste Generation and Disposal

Reduction of non-recyclable waste is a priority for GANDA. However, as indicated in our initial Green Plan, finding meaningful ways of measuring reductions has been more challenging given that waste pickup is based on the same set number of receptacles, rather than on actual weight or volume, and paper usage is often dependent upon client expectations. As a result, we did not establish a goal for waste reduction during the last two-year assessment period, but did monitor non-recyclable waste disposal in our San Anselmo and Auburn offices with the intention of establishing a mechanism for tracking and an internal reduction goal. Based on our observations, we are committing to a one percent (1%) reduction in purchased office paper for the San Anselmo, Oakland and Auburn offices. If waste pickup policies and practices change to reflect actual weight or volume, we will be in a position to revisit our waste reduction goal.

Regulatory and Legal Compliance

Not only is regulatory and legal compliance good green policy, it is also important from a company operations standpoint since it affects clients' perceptions of our professionalism and ability to effectively manage our work efforts.

GANDA's company-wide goal is to have no (0 percent) notice of violations, permit non-compliances, reportable spills, or assessed monetary fines or penalties. GANDA was successful in meeting this goal during the initial two-year assessment period, and will continue to maintain a log of Notice of Violations, Permit Non-compliances, Reportable Spills, or assessed Monetary Fines or Penalties for the current three-year assessment period.

Checking and Corrective Action

Raw data will continue to be collected and entered into detailed spreadsheets for simplified analysis. Monthly data will be stored on internal company server separated by each subcategory and office. Bimonthly reports may be emailed to Regional Managers if deemed beneficial.

In the event that results for a reporting period element (i.e., GHG emissions, waste reduction) is **equal to** a prior comparable period (i.e. no appreciable change has been made toward meeting our voluntary reduction), the underlying data will be reviewed in more detail to determine if midcourse corrections need to be made.

In the event that results for a reporting period element (i.e., GHG emissions, waste reduction) is **higher than** a prior comparable period (i.e. no appreciable change has been made toward meeting our voluntary reduction and we are actually trending higher than the preceding period), the underlying data will be reviewed in more detail to determine if midcourse corrections need to be made, and a management meeting will be called to discuss the results and devise action plans for implementing aggressive midcourse corrections.

Management Review

Management review is undertaken on two levels:

- 1) Annual meeting to: a) review prior-year results, in comparison to earlier results and to voluntary targets, and b) to establish proposed action items and voluntary targets for the coming year.
- 2) Midcourse correction meeting in the event that trending indicates one or more voluntary targets will not be met.

Reporting

GANDA's first formal "Green Plan" initiative started mid-year 2011, and had its first year of results available in 3rd Quarter, 2012; a second year of results were published during the 4th Quarter of 2012. Reporting is now provided on our company website (www.garciaandassociates.com), with interim status updates. This plan revision is also available via a link on our website.