



GARCIA AND ASSOCIATES

“GREEN PLAN” REPORT

BASE YEAR 3 / PLAN YEAR 6

OVERVIEW

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

GANDA's Green Plan, initially prepared and formalized in 2012 lays out GANDA's Environmental Green Stewardship policy statement, implementation, and methods for tracking and monitoring success against identified action items. The Plan has two elements: Management Actions Items which, once implemented, will reduce environmental impacts; and implementation of an Environmental Management and Tracking System (EMTS) under which energy and water usage, and direct/indirect impacts are tracked against established goals.

As part of our Green Plan, GANDA established an initial two-year assessment period which set July 2010 to June 2011 as its base year (Base Year 1) and ran from July 2011 through June 2013 (Plan Year 1, 2). GANDA management revised the Green Plan in October 2014 and has implemented and completed a three-year assessment period, using the final year of the last assessment period as the base year (Base Year 2) and running from July 2013 through June 2016 (Plan Years 3, 4, 5).

With the addition of the San Rafael office in the middle of 2016, GANDA has determined to begin a new assessment period, with the period from July 2016 through June 2017 acting as a new Base Year (3). This has allowed GANDA to effectively report trends with this new setup as a basis, rather than reporting dramatic performance shifts in the middle of the assessment period, as seen in this past assessment period with the expansion of the Oakland office.

GREEN PLAN MANAGEMENT ACTION ITEMS

For the management actions aspect of the plan (Action Items), GANDA's initial Green Plan established three planning horizons (short, medium and long term) for implementing identified actions such as conducting energy audits at our offices, installing solar PV systems, etc. that would result in positive steps toward reducing our company's carbon footprint.

Action items not completed during their assessment periods are extended to the following period. Items accomplished during both completed assessment periods include:

- Installation of solar PV system on the San Anselmo office building.

- Assessment by utility representatives of energy and water use
- Replacement an inefficient irrigation controller at the Auburn office (location of our largest landscaped facility)
- Installation of energy-efficient lighting throughout the San Anselmo building
- Replacement of toilets and faucets with low-flow models/emitters
- Installation of 'smart' HVAC controls in San Anselmo on the two HVAC units
- Replacement of aging gas/electric air conditioning unit at Oakland office with high efficiency unit
- Installation of energy efficient double-pane windows at the Oakland office
- Replacement of aging company vehicles in the with newer hybrid and more fuel-efficient vehicles
- Implementation of paperless initiatives in several administrative and accounting procedures to reduce paper and toner waste.
- Installation of ceiling fans in San Anselmo office to improve air circulation and reduce dependence on air conditioning.

ENVIRONMENTAL MANAGEMENT AND TRACKING SYSTEM

In addition to identifying and implementing management action items, we set up an Environmental Management and Tracking System (EMTS) in which we calculated baseline usage in five impact areas, set reduction goals for the initial two-year assessment period covering July 2011 through June 2013, and then evaluated our performance for this three-year period against the base year of July 2010 to June 2011.

GANDA is pleased to report that the initial assessment has well surpassed initial internal goals for reducing GHG emissions, energy usage, water usage and regulatory and legal compliance. GANDA has recommitted to achieving the same reduction goals in these four areas for the current three-year tracking period (July 2013 through June 2016). In addition, as part of the Plan update which occurred in fourth quarter 2013, it developed a target for waste reduction and broadened its assessment area to include its office building in Oakland (acquired in August 2013). GANDA's EMTS now covers four GANDA-owned facilities in northern California: San Anselmo, San Rafael, Auburn and Oakland.

IDENTIFICATION OF MANAGEMENT ACTION ITEMS, WITH PLANNING HORIZONS

As indicated above, GANDA initiated efforts in mid-2011 to identify and reduce its carbon footprint. The approach taken was to identify those efforts that could be reasonably undertaken and cost-effective.

Key elements of this assessment were as follows:

- Field trucks and boats have the largest impact on Scope 1 GHG emissions (approximately 90-95%).
- Full-service offices have the largest impact on Scope 2 GHG emissions, energy consumption, water use and waste generation.
- Field operations have the highest potential to result in environmental compliance violations.

- We have more control over the usage/implementation of measures for office facilities owned by GANDA.

Secondary determinations of this assessment included:

- A greater impact can be achieved by focusing on larger offices with the greatest number of employees reporting to the offices on a daily or regular basis (impact areas: GHG Scopes 1 and 2, energy consumption, water use, waste generation and methods of commuting to/from work).
- GHG emissions (Scope 2) and total energy usage are different because of the increased presence of gas heating with the significant expansion of the Oakland office. Kilowatt-hours from electricity production and Therms from natural gas use have different emissions factors.

For the current third assessment period, the following goals are proposed for the Short, Medium and Long Term:

Short Term (<6 months, starting July 1, 2016):

- Formalize a policy to purchase Energy Star equipment for all new purchases.
- Improve irrigation system at San Anselmo building for better distribution and water efficiency.

Medium Term (<2 years, starting July 1, 2016):

- Conduct an energy retrofit analysis for the 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 accomplished for this office]
- Apply window treatment for better insulation at San Anselmo office.
- Conduct bi-monthly evaluations of utility (electric, gas, water, waste removal) and bottled water bills. [PRIOR]
- Conduct quarterly analyses of vehicle logs to calculate total GHG Scope 1 emissions. [ONGOING]
- Replace aging truck fleet with more fuel-efficient vehicles. [ONGOING]
- Regularly maintain existing solar panels to maintain maximum power generation [ONGOING]

Long Term (< 5 years, starting July 1, 2016):

- Replace aging truck fleet with hybrids, PZEVs, or other low-emission vehicles (will be dependent upon advances in off-road capabilities since field staff are often in remote, harsh conditions). [ONGOING]
- Conduct an energy retrofit analysis for other GANDA-owned office buildings to determine most effective means for reducing energy usage (e.g., upgrade HVAC, install PV and/or upgrade lighting systems).
- Reduce paper and ink waste by implementing paperless initiative, including direct deposit for payroll and expense reimbursement, and digital accounting and correspondence procedures. [ONGOING]
- Encourage alternative transit to regular commute sites. [ONGOING]

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 – GOALS AND TRACKING

Scope 1 Emissions from Company Vehicles

GANDA committed to reducing its company fleet's vehicle emissions by 2 percent during the Initial and Second assessment periods; GANDA has determined to commit to a 5 percent reduction in vehicle emissions over the 5 year assessment term (commencing July 2016, and ending June 2021). The reduction is being determined by calculating the total emissions from GANDA-owned vehicles during the Base Year, and trending against a comparable reporting period during the assessment period. GANDA has used the EPA website to calculate the anticipated GHG emissions by each vehicle's make, model and year.

Period of Review	Size of Fleet	Vehicle Days	Vehicle Miles	Met Tons of CO2	% Change in CO2 [BY3]
Base Year 3 (7/16-6/17)	40	5,220	549,746	276.38	

The company fleet is regularly updating its fleet of vehicles. This base year term had 40 active vehicles, however in prior years the total number of vehicles reached 43. We have previously implemented measures to improve efficiency and reduce emissions including telecommuting, and use of passenger vehicles when and where feasible. This assessment does not include impact of personal or rental vehicle use.

Scope 2 Indirect Emissions from Electricity Purchases

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. GANDA had a 5 percent reduction goal for the initial assessment period, covering its San Anselmo and Auburn offices. For the recently completed assessment period, GANDA committed to an additional 5 percent reduction, and included its Oakland office in the calculations. Even with the doubling size of the Oakland office, GANDA still achieved a 5% total reduction in power use.

Scope 2 GHG emissions for the four offices are being 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 most recent electricity emissions factor provided by PG&E.

In order to track energy usage, we monitor and evaluate utility bills on a bi-monthly basis for the four offices, including analyzing electricity produced by the rooftop solar panels on the San Anselmo building. Natural gas usage is fairly nominal in our operations (mostly for heating); nevertheless, we're monitoring our usage in order to see if we can identify means for reducing natural gas usage as well.

Review Period / Office	kWh/day	lbs CO2/day	lbs CO2 Electricity Emissions Total	% Change CO2/day [BY3]
San Anselmo, CA [less solar generation]				

Base Year 3 (7/16-6/17)	20.18	8.98	3,277.87	
San Rafael, CA				
Base Year 3 (7/16-6/17)	12.76	5.68	2,089.45	
Auburn, CA				
Base Year 3 (7/16-6/17)	39.86	17.74	6,500.79	
Oakland, CA				
Base Year 3 (7/16-6/17)	35.77	15.92	5,809.13	
Composite for All Offices				
Base Year 3 (7/16-6/17)	108.56	48.31	17,677.25	

Reductions in total indirect GHG emissions and energy usage can be achieved by decreased electricity usage in our office buildings in the form of upgrading HVAC and lighting systems and/or installing renewable energy systems. GANDA installed a rooftop PV solar system in December 2011 on its San Anselmo office building, and made major lighting upgrades in early 2012 in the San Anselmo building. We also installed energy-efficient, double-paned windows in the Oakland office in late 2013. With the recent end of the drought, San Anselmo saw a remarkable improvement in solar power generation, to the point that the building was producing more power than used for several months.

Water Usage

GANDA is also observing water use as part of its Green Plan. As this is the first full year that GANDA will be reporting for four offices, we've allowed a 5% reduction goal over 5 years.

Review Period / Office	CCFs/day	Total CCFs	% Change total CCF [BY3]
San Anselmo, CA			
Base Year 3 (7/16-6/17)	0.12	42	
San Rafael, CA			
Base Year 3 (7/16-6/17)	0.05	18	
Auburn, CA			
Base Year 3 (7/16-6/17)	0.34	124	
Oakland, CA			
Base Year 3 (7/16-6/17)	0.28	101	
Composite for All Offices			
Base Year 3 (7/16-6/17)	0.78	285	

Reductions in total water usage can be achieved by retrofitting toilets, faucets, installing programmable controllers on irrigation systems and/or rainwater catchment systems. GANDA has undertaken a

number of these actions but will look for additional opportunities to reduce our water usage at our Auburn and Oakland office locations.

Waste Generation / Disposal

Reduction of non-recyclable waste is a priority for GANDA. To better manage our non-recyclable waste, GANDA actively tracks garbage bills and the total amount of paper purchased monthly. Internal directives have been issued regarding 'paperless' systems and archiving, double-sided printing, and other methods of reducing paper usage. With these directives executed, San Anselmo Headquarters has reduced paper ink waste and clutter. More initiatives have been planned to reduce waste in other aspects of administrative processes. However, 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. Cutting waste down to a sufficient degree may permit a reduction in bins, effectively reducing our maximum trash volume calculation.

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 notice of violations, permit non-compliances, reportable spills, or assessed monetary fines or penalties. GANDA was successful in meeting this goal during this base year, as well as for the entire assessment period.