



Report

July 14, 2011

Grant Thornton LLP

Greenhouse Gas Inventory



July 14, 2011

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Dear Sir:

Subject: Greenhouse Gas Inventory

Raymond Chabot Grant Thornton was retained by Grant Thornton LLP to calculate its Greenhouse Gas (GHG) Inventory for the period from August 1, 2009 to July 31, 2010. The information was provided by Grant Thornton LLP and processed by Raymond Chabot Grant Thornton.

We have completed our report that we are pleased to submit to you.

Yours truly,

Raymond Chabot Grant Thornton LLP

Chartered Accountants

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List of Acronyms and Symbols

BTU:	British Thermal Units
GHG:	Greenhouse Gas
GWP:	Global Warming Potential
HFC:	Hydrofluorocarbon
IPCC:	International Panel on Climate Change
ISO:	International Organization for Standardization
LLP:	Limited Liability Partnership
US EPA:	United States Environmental Protection Agency
CO ₂ :	Carbon Dioxide
N ₂ O:	Nitrous Oxide
CH ₄ :	Methane
tCO ₂ e:	Metric Tons of Equivalent Carbon Dioxide

1. Summary

Raymond Chabot Grant Thornton was retained by Grant Thornton LLP to calculate its Greenhouse Gas (GHG) Inventory for the period from August 1, 2009 to July 31, 2010. The present report has been written in accordance with the International Organization for Standardization (ISO) 14064-1¹ and the GHG Protocol².

An operational control approach has been used to establish organizational boundary limits. Only emissions which are based on activities which Grant Thornton LLP has operational control on were accounted for.

A summary of Grant Thornton LLP's GHG emissions by source and for the period from August 1, 2009 to July 31, 2010 is shown in Table 1.

Table 1 – Equivalent CO₂ (metric tons) by source

Emission source	Equivalent CO ₂ (metric tons)	Percentage of total (%)
Natural gas (Direct)	428	1.24%
Natural gas (Indirect Energy)	782	2.27%
Natural gas (Indirect Other)	40	0.12%
Coal (Indirect Energy)	65	0.19%
Chillers (Direct)	892	2.59%
Electricity (Indirect Energy)	11,468	33.34%
Office car commuting (Indirect other)	8,222	23.91%
Client air travel (Indirect Other)	7,577	22.03%
Client car travel (Indirect Other)	3,375	9.81%
Client train travel (Indirect Other)	3	0.01%
Paper usage (Indirect Other)	1,542	4.48%
Total	34,395	100.00%

Grant Thornton LLP's total GHG Emissions was reported as 34,395 metric tons of equivalent CO₂. This includes 3.84% of direct emissions from natural gas and chillers, 35.81% of indirect energy emissions from electricity, natural gas and coal and 60.36% of other indirect emissions from office car commuting, client car travel, client air travel, client train travel and paper usage.

Greg Kozak of ERM Certification and Verification Services Limited was retained to provide an independent third party verification for Grant Thornton LLP's GHG Inventory.

¹ ISO 14064-1:2006. Greenhouse Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.

² World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) (March 2004). The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. ISBN 1-56973-568-9.

2. Organization Profile and Offices Considered in the Calculation

Grant Thornton LLP is an audit, tax and advisory services organization and a member firm of Grant Thornton International. Grant Thornton LLP is comprised of 52 offices across the United States with over 5,000 employees. Each of these offices occupies a portion of an office building that it leases. Table 2 shows the address and the total square footage of each building, the square footage that Grant Thornton LLP occupies within the building and the number of full and part time employees.

Table 2 – Grant Thornton LLP Offices

Location	Address	Total square footage	Occupied square footage	Number of employees
Albuquerque	100 Sun Avenue NE, Suite 602 Albuquerque NM 87090	178,080	12,914	20
Alexandria	333 John Carlyle Street, Suite 500 Alexandria VA 22314	152,812	98,011	550
Appleton	2501 East Enterprise Ave, Suite 300 Appleton WI 54913	50,042	16,744	44
Atlanta	1100 Peachtree Street NE, Suite 1200 Atlanta GA 30304	610,000	22,346	157
Austin HQ	100 Congress Avenue, Suite 2000 Austin TX 78701	517,800	387	2
Baltimore	One South Street, Suite 2400 Baltimore MD 21202	447,363	13,913	64
Boston	226 Causeway Street, 6 th Floor Boston MA 02135	197,909	32,754	147
Charlotte	201 South College Street, Suite 2500, Charlotte NC 28244	612,857	47,619	228
Chicago	175 West Jackson Blvd, Suite 2000 Chicago IL 60604	1,394,357	133,724	464
Cincinnati (Norwood)	4000 Smith Road, Suite 500 Building Two Norwood OH 45209	115,511	25,000	88
Cleveland	1228 Euclid Avenue, Suite 800 Cleveland OH 44113	440,000	24,462	98
Columbia	1320 Main Street, Suite 500 Columbia SC 29211	350,000	7,874	38
Dallas	1717 Main Street, Suite 1500 Dallas TX 75201	1,530,957	59,395	289
Denver	707 17 th Street, Suite 3200 Denver CO 80202	563,084	20,153	92

Location	Address	Total square footage	Occupied square footage	Number of employees
Detroit (Southfield)	27777 Franklin Road, Suite 800 Southfield MI 48034	442,370	38,780	123
Edison	399 Thornall Street, 4 th Floor Edison NJ 08837-2243	330,082	16,075	62
Ft. Lauderdale (Sunrise)	1301 International Parkway, Suite 300 Fort Lauderdale FL 33323	140,160	23,682	103
Greensboro	300 North Greene Street, Suite 800 Greensboro NC 27401	324,115	8,144	31
Honolulu	1132 Bishop Street Honolulu HI 96814	439,232	15,272	41
Houston	333 Clay Street, Suite 2700 Houston TX 77002	1,191,254	54,962	226
Irvine	18400 Von Karman Avenue, Suite 900 Irvine CA 92715	220,502	20,456	98
Kansas City	1201 Walnut, Suite 1000 Kansas City MO 64106	480,416	20,324	91
Los Angeles	1000 Wilshire Boulevard, Suite 300 Los Angeles CA 90017	473,626	17,552	92
Madison	2 East Gilman Street Madison, WI 53703	523,413	15,336	48
McLean	2010 Corporate Ridge, Suite 400 McLean VA 22102	259,614	28,513	136
Miami	801 Brickell Avenue, Suite 2450 Miami FL 33131	415,150	9,299	38
Milwaukee	100 East Wisconsin Avenue, Suite 2100 Milwaukee WI 53202	430,865	17,626	59
Minneapolis	206 South Sixth Street, Suite 500 Minneapolis MN 55402	1,319,889	41,398	163
New York - Downtown	60 Broad Street, 24 th Floor New York NY 10004	114,336	36,169	164
New York - Midtown	666 Third Avenue, 13 th floor New York NY 10174	750,000	77,504	268
New York (Melville)	445 Broad Hollow Road, Suite 300 Melville NY 11747	250,000	12,516	50
Oakbrook Terrace	1901 S. Meyers Road, Suite 455 Oakbrook Terrace IL 60181	325,116	64,325	214
Oklahoma City	211 North Robinson, Suite 1200 Oklahoma City OK 73102	735,514	24,655	71
Orlando	200 South Orange Avenue, Suite 2050 Orlando FL 32801	640,741	6,278	26

Location	Address	Total square footage	Occupied square footage	Number of employees
Philadelphia	2001 Market Street, Suite 3100 Philadelphia PA 19103-7080	953,276	39,195	200
Phoenix	2398 East Camelback Road, Suite 600 Phoenix AZ 85016-9002	288,274	15,973	64
Portland	111 SW Columbia, Suite 800 Portland OR 97201	254,500	10,644	41
Raleigh	4140 Park Lake Avenue, Suite 130 Raleigh NC 27612	159,452	9,945	55
Reno	100 West Liberty Street, Suite 770 Reno NV 89501	149,000	15,499	44
Sacramento	770 L Street, Suite 950 Sacramento CA 95814	169,078	407	5
Salt Lake City	155 North 400 West, Suite 500 Salt Lake City UT 84103	212,000	11,577	47
San Antonio	112 E. Pecan, Suite 2800 San Antonio TX 78205	490,871	6,773	12
San Diego	12220 El Camino Real, Suite 300 San Diego CA 92130	56,552	10,544	26
San Francisco	One California Street, Suite 2300 San Francisco CA 94111-5424	465,773	25,307	104
San Jose	150 Almaden Blvd., Suite 600 San Jose CA 95113	207,611	13,818	53
Seattle	520 Pike Tower, Suite 2800 Seattle WA 82404	374,270	17,686	70
St. Louis	231 South Bemiston Avenue, Suite 600 St. Louis MO 63105	174,004	2,334	15
Tampa	101 East Kennedy Blvd., Suite 3850 Tampa FL 33602	766,136	11,078	50
Tulsa	2431 East 61st Street, Suite 500 Tulsa OK 74136	151,879	20,123	80
Washington, DC	1250 Connecticut Avenue NW, Suite 400 Washington DC 20036	179,938	15,344	40
Wichita	8200 Thorn Drive, Suite 300 Wichita KS 67226	150,725	22,174	54
Woodland Hills	21600 Oxnard Street, Suite 1100 Woodland Hills CA 91367	368,171	12,326	18

Notes

- The number of employees is an average of the number of employees as of July 31, 2009 and July 31, 2010.
- Square footage information is based on a software tool used by Grant Thornton LLP called Facility Wizard in which square footage is tracked against lease obligations.

In addition to the 52 offices, an office also exists in Anchorage, Alaska, where the total square footage is 69,884 and the occupied square footage is 193. The employees at this location are from Seattle and Portland. Therefore, the natural gas and electricity emissions from this office have been evenly distributed between the Seattle and Portland locations.

Grant Thornton LLP has contracted Raymond Chabot Grant Thornton to quantify its GHG emissions for the period covering August 1, 2009 to July 31, 2010. This is the first time Grant Thornton LLP has quantified its emissions. This period will be used as the historical base year and the base year for future GHG inventories. However, as noted in ISO 14064-1 5.3.1¹, this base year may be modified at a later date given that an explanation is provided. The method used to recalculate the base year is based on the procedures outlined in the GHG Protocol². More specifically, the following events will trigger a recalculation of the base year emissions:

- An acquisition, divestiture, outsourcing or transfer of control, provided that the aforementioned modified a situation that existed during the base year
- An improvement made in measurement, quantification methodology, accuracy of emission factors or activity data or the discovery of previous errors.

3. GHG Inventory Design and Development

3.1 Organizational Boundary

According to ISO 14064-1¹ and the GHG Protocol², it is necessary to establish organizational boundary limits for a GHG inventory. An operational control approach has been used to establish organizational boundary limits. In other words, all GHG emissions which are based on activities for which Grant Thornton LLP has operational control on will be accounted. More specifically, each of the 52 offices which are to be considered in this inventory has control over its own operations.

3.2 Operational Boundary

The GHG emission sources at Grant Thornton LLP can be categorized into three different operational boundaries as defined in ISO 14064-1¹ and the GHG Protocol²: direct emissions (Scope 1), indirect energy emissions (Scope 2) and other indirect emissions (Scope 3).

Table 3 summarizes each GHG emission source at Grant Thornton LLP according to its scope.

Table 3 – Emission source classification by operational boundary

Emission source	Scope
Natural gas (direct)	1
Natural gas (energy indirect)	2
Natural gas (other indirect)	3
Chillers (direct)	1
Coal (energy indirect)	2
Electricity (energy indirect)	2
Office car commuting (other indirect)	3
Client air travel (other indirect)	3
Client car commuting (other indirect)	3
Client train travel (other indirect)	3
Paper usage (other indirect)	3

Direct emission sources at Grant Thornton LLP are composed of natural gas consumption for heating purposes and refrigerant leakages from chillers used for air conditioning and cooling. These sources are considered direct because Grant Thornton LLP has operational control over heating, cooling and air conditioning and emissions are a direct result of these processes.

Indirect energy emission sources are composed of electricity consumption and purchased steam generated from natural gas and coal. These sources are classified as indirect because emissions do not occur at the time electricity or steam is used, but at the time it is produced. Grant Thornton LLP has control over the usage of electricity and steam, but not over its production.

Other indirect emissions at Grant Thornton LLP include the production of natural gas, office commuting, client air travel, client car travel, client train travel and paper usage. The production of natural gas pertains to the production, processing, transmission, storage and distribution of natural gas. Office commuting pertains to employee travel to and from the office while client car travel refers to travel solely to client locations. Emissions from the production of natural gas, travel and paper usage are considered Other indirect emissions because they are not produced by any Grant Thornton LLP activity, but by a third party activity at the request of Grant Thornton LLP. The natural gas used is not produced by Grant Thornton LLP. As well, the vehicles used for travel are not owned by Grant Thornton LLP and the emissions related to paper usage are generated by its production and elimination. Natural gas production has been quantified as it is considered to be a GHG emission from the production and distribution related to energy other than the electricity, steam and heat consumed by the organization, as outlined in Appendix B of ISO 14064-1¹ Travel and paper usage have been quantified as they represent a significant portion of GHG emissions at Grant Thornton LLP.

Other indirect emissions that have not been quantified include emissions related to commuting by bus or subway. These emissions are considered to be negligible in comparison to the overall carbon footprint of Grant Thornton LLP.

4. Quantification

Based on a recognized methodology for calculating GHG emissions in section 4.3.6 of ISO 14064-1¹, the activity data is multiplied by its appropriate emission factor(s) for each emission source. The activity data and emission factor(s) for each source are described in the subsequent sections. Appendix C provides a summary of activity data by office used whereas Appendix B provides a summary of emission factors used.

4.1 Natural Gas

4.1.1 Activity Data

Activity data for natural gas is based on email communications between Grant Thornton LLP's Michael Alden and Carrol Gallo and representatives from each Grant Thornton LLP office. Natural gas consumption was obtained in the following units of measure depending on the office: dekatherms, 1,000 lbs of steam, 100 ft³ of natural gas, 1,000 ft³ of natural gas, 1,000,000 BTUs or 100 ft³ of steam. These various units were each converted to therms by using the factors shown in Table 4.

Table 4 – Natural gas and steam conversion factors

Unit conversion	Reference/Explanation
1 dekatherm = 10 therms	http://www.onlineconversion.com/energy.htm
1,000 lbs of steam = 9.7 therms	http://www.engineeringtoolbox.com/saturated-steam-properties-d_273.html
100 ft ³ of natural gas = 1 therm	1 ft ³ of natural gas is approximately equal to 1,000 BTU (http://natgas.info/html/natgasunitsconversion.html)
1,000 ft ³ of natural gas = 10 therms	1 ft ³ of natural gas is approximately equal to 1,000 BTU (http://natgas.info/html/natgasunitsconversion.html)
1,000,000 BTU = 10 therms	http://www.onlineconversion.com/energy.htm
100 ft ³ of steam = 9.7/268 therms	http://www.engineeringtoolbox.com/saturated-steam-properties-d_273.html

Natural gas activity data was unavailable for 2 out of 52 offices. In order to estimate the emissions related to these offices, natural gas activity data from other offices with similar climate conditions and hence energy consumptions were used. For example, the unknown San Jose, California natural gas consumption was estimated by taking the known Los Angeles, California natural gas consumption and multiplying it by the square footage ratio of San Jose, California to Los Angeles, California. Table 5 identifies the two offices for which natural gas activity data could not be obtained and the corresponding office chosen to estimate their emissions.

Table 5 – Offices for which natural gas/steam consumption was estimated

Office requiring estimation	Office used to make estimation
San Jose, California	Los Angeles, California
Wichita, Kansas	Oklahoma City, Oklahoma

Natural gas consumptions representing the consumption of the entire building, were multiplied by the fractions of square footage that the Grant Thornton LLP office occupies in the buildings. Square footage information is based on a software tool used by Grant Thornton LLP called Facility Wizard which tracks square footage against lease obligations.

Three Grant Thornton LLP offices use steam which is generated from natural gas. A boiler efficiency of 0.8 obtained from the United States Environmental Protection Agency (US EPA) was used to convert steam energy in therms to natural gas energy in therms³. Two of these Grant Thornton LLP offices do not produce the steam themselves. Instead, it is purchased from an energy supplier. Therefore, the emissions generated from these two offices' activity data are considered energy indirect (scope 2). The third Grant Thornton LLP office produces its steam through the use of its natural gas boiler. Thus, the emissions generated from this office's activity data is considered direct (scope 1).

4.1.2 Emission Factor

Emission factors were obtained for the production as well as the combustion of natural gas. Production emission factors for carbon dioxide and methane were obtained from the International Panel on Climate Change (IPCC)⁴. More specifically, emission factors for the production, processing, transmission storage and distribution of gas were obtained in units of Gigagrams of greenhouse gas per million cubic meters of natural gas. When more than one value was given, the largest emission factor was chosen in order to be conservative. These factors were then summed together and converted to metric tons of greenhouse gas per therm. These factors were applied to natural gas activity data that pertained to direct emissions. Combustion emission factors for carbon dioxide, methane and nitrous oxide were obtained from the US EPA⁵. GWPs from ISO 14064-1 were used to sum the emissions from each gas to equivalent CO₂ to determine the total GHG emissions.¹

4.2 Coal

4.2.1 Activity Data

Activity data for coal is based on email communication between Grant Thornton LLP's Michael Alden and Carrol Gallo and representatives from the Milwaukee Grant Thornton LLP office, the only office which uses steam produced by burning coal. Since the consumption provided represented the

³ United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Indirect Emissions from Purchases/Sales of Electricity and Steam. EPA430-K-03-006, page 5.

⁴ International Panel on Climate Change (2006). IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 4 – Fugitive Emissions, pages 48-50.

⁵ United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Direct Emissions from Stationary Combustion Sources. EPA430-K-08-003, pages 21 & 27.

consumption of the entire building, it was multiplied by the fraction of square footage the Grant Thornton LLP office occupies in the building. The activity data was obtained in 1,000 lbs of steam units which was converted to therms by using the corresponding factor shown in Table 4. A boiler efficiency of 0.8 obtained from the US EPA was used to convert steam energy in therms to coal energy in therms.³ This office purchases its steam from an energy supplier. Therefore, the emissions generated from the activity data are considered energy indirect (scope 2).

4.2.2 Emission Factor

Coal emission factors for carbon dioxide, methane and nitrous oxide were obtained from the US EPA⁶. GWPs from ISO 14064-1 were used to sum the emissions from each gas to equivalent CO₂ to determine the total GHG emissions.¹

4.3 Electricity

4.3.1 Activity Data

Electricity activity data is based on email communications between Grant Thornton LLP's Michael Alden and Carrol Gallo and representatives from each Grant Thornton LLP office. Electricity consumption was obtained in kWh.

Office electricity consumptions representing the consumption of the entire building were multiplied by the fraction of square footage that the Grant Thornton LLP office occupies within the building.

Electricity activity data for 3 of the total 52 offices was unavailable. In order to estimate the emissions related to these offices, electricity activity data from other offices with similar climate conditions and hence energy consumptions were used.

Table 6 identifies the offices for which electricity activity data could not be obtained and the corresponding office chosen to estimate their emissions.

Table 6 – Offices for which electricity consumption was estimated

Office requiring estimation	Office used to make estimation
Baltimore, Maryland	Cleveland, Ohio
San Jose, California	Los Angeles, California
Wichita, Kansas	Oklahoma City, Oklahoma

⁶ United States Environmental Protection Agency (15 Apr 2010). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Direct Emissions from Stationary Combustion Sources. EPA430-K-08-003, pages 21 & 27

4.3.2 Emission Factor

Electricity emissions factors by region for carbon dioxide, methane and nitrous oxide were obtained from the US EPA.⁷ These factors were obtained in lbs of greenhouse gas per MWh which were subsequently converted into metric tons of greenhouse gas per kWh. Global Warming Potentials (GWPs) from ISO 14064-1¹ are used to sum the emissions from each gas to equivalent CO₂.

4.4 Chillers

4.4.1 Activity Data

Chiller activity data is based on email communications between Grant Thornton LLP’s Michael Alden and Carrol Gallo and representatives from each Grant Thornton LLP office. The number of chillers as well as their respective thermal capacities (chillers sizes) were obtained in refrigeration tons. When the number of chillers was determined but the thermal capacities were unknown, the average thermal capacity from other Grant Thornton LLP offices in which the thermal capacity was known was used. Table 7 identifies the offices which used this average. Another option considered was to use thermal capacities from known offices with similar square footages and climates. However, it was decided to use an average.

Table 7 – Offices using thermal capacity (chiller size) average

Offices	Average used (refrigeration tons)
Washington, District of Columbia	504
Orlando, Florida	
McLean, Virginia	
Minneapolis, Minnesota	
Oakbrook Terrace, Illinois	
Seattle, Washington	

4.4.2 Emission Factor

According to Engineering Consultant James Calm, 99% of emissions from refrigeration units are produced by energy consumption⁸. Therefore, the emissions from leakage are considered to be small in comparison to the overall carbon footprint of Grant Thornton LLP. Nevertheless, these emissions will be quantified since they are direct (scope 1).

⁷ United States Environmental Protection Agency (eGRID2010 Version 1.0). eGRID2010 Year 2007 Summary Tables, page 1, Retrieved from http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2010V1_0_year07_SummaryTables.pdf

⁸ Calm (2006). Comparative efficiencies and implications for greenhouse gas emissions of chiller refrigerants. International Journal of Refrigeration. Vol 23, p. 833-841.

A 15% refrigerant charge leakage rate is assumed based on information from the US EPA⁹. This leakage rate, the GWP of the refrigerant along with the square footage fraction that Grant Thornton LLP occupies in the building are multiplied together to obtain the emission factor for each office. Regarding the refrigerant assumed in this calculation, Calm states the most widely used refrigerants are HFC-22 and HFC-410A in small chillers, HFC-134a in mid-size chillers and HFC-123 and HFC-134a in large chillers.⁸ However, the definition of small, medium and large chillers is not specified. As a result, the refrigerant with the largest GWP was chosen in order to be conservative. HFC-410A composed of 50% HFC-32 and 50% HFC-125⁸ has the largest GWP at 1725¹⁰ and hence was used in calculations.

Since the emission factor is a leakage rate of refrigerant charge, it is necessary to relate the thermal capacity activity data to refrigerant charges. In order to obtain this relationship, several different size chillers were researched and their respective refrigerant charges were recorded in order to regress the relationship between these variables. The following equation was developed through a sum of least squares regression:

$$c = 1.854t + 75.109$$

where

c = refrigerant charge (lbs)

t = thermal capacity (refrigeration tons)

The refrigerant charges obtained in lbs from the above equation for each chiller of known thermal capacity were subsequently converted to metric tons. These intermediate values were then multiplied by the emission factor incorporating the leakage rate, the GWP of the refrigerant and the square footage fraction of each office to obtain the emissions in equivalent CO₂.

4.5 Office Car Commuting

4.5.1 Activity Data

Activity data for commuting to an employee's office is based on an employee survey, shown in Appendix E. Raymond Chabot Grant Thornton in collaboration with Grant Thornton LLP developed a survey to estimate the number of car miles associated with employee commuting to and from the office. Questions in the survey allowed for the quantification to take into account the frequency at which a car is used to go to work as well as carpooling with other employees.

The number of car miles was calculated for each employee that responded to the survey. If the employee noted that he/she never uses a car, the car miles were assumed to be zero. If the employee noted that he/she does use a car but never carpools, the car miles were calculated using the following equation:

⁹ United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment. EPA430-K-03-004, page 11.

¹⁰ Calculated based on GWP average of HFC-32 and HFC-125 from ISO 14064-1:2006. Greenhouse Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.

$$\frac{2wcde}{100}$$

where

w = the number of assumed weeks in a working year = 49

c = the average distance travelled one way

d = the number of days one goes to the office in a week

e = the average percentage (%) of days that one uses a car to go to the office

If the employees noted that they do use a car and carpool a certain percentage of the time, the car miles was calculated by the following equation:

$$\frac{2wcdegh}{100^3} + \frac{2wcde(100 - g)}{100^2}$$

or

$$\frac{2wcde}{100^2} \left[\frac{gh}{100} + (100 - g) \right]$$

where

g = the average percentage (%) of days that one carpools

h = the average percentage (%) that one is the driver when one carpools

For each employee that filled out the survey, the miles calculated according to one of the above formulas were allocated to the office where the employee works. This allowed for the summation of the total number of office car miles reported by office. Using the number of employees that responded to the survey and the number of employees listed in Table 2 for each office, the response rates for the survey were calculated on a per office basis. Using the inverse of these response rates as linear extrapolation factors, the overall car miles travelled were calculated for each office.

4.5.2 Emission Factor

Office car commuting emission factors for carbon dioxide, methane and nitrous oxide were obtained from the US EPA¹¹. GWPs from ISO 14064-1¹ were used to sum the emissions from each gas to equivalent CO₂ for each office. These emissions for each office were then summed together to determine the total GHG emissions.

4.6 Client Car Travel

4.6.1 Activity Data

Activity data for client car travel is composed of car travel from employees using their own vehicle to visit clients as well as car rentals. Activity data in the form of miles driven by employees using their own vehicle was obtained from expense reports at each office. Client car rental travel activity data is based on management data tools “Access from Work” and “Cap Data” from American Express which track information on reservations made by all employees. The number of car days was

¹¹ United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Optional Emissions from Commuting, Business Travel and Product Transport. EPA430-R-08-006, page 3.

obtained for each office in which a car day is defined as a distance of 80 miles. This value is based on the average usage of car miles across companies of like industry from American Express reports. Multiplying 80 miles by the number of car days for each office produces the number of car rental miles travelled for each office. Summing the miles driven from employees using their own vehicle with the miles travelled using rental cars provided the total client car miles for each office.

4.6.2 Emission Factor

Client car travel emission factors for carbon dioxide, methane and nitrous oxide were obtained from the US EPA¹¹. GWPs from ISO 14064-1¹ were used to sum the emissions from each gas to equivalent CO₂.

4.7 Client Train Travel

4.7.1 Activity Data

Client train travel activity data is based on management data tools “Access from Work” and “Cap Data” from American Express which track information on reservations made by all employees. The number of train miles was obtained for each office.

4.7.2 Emission Factor

Client train travel emission factors for carbon dioxide, methane and nitrous oxide were obtained from the US EPA¹². GWPs from ISO 14064-1¹ were used to sum the emissions from each gas to equivalent CO₂.

4.8 Client Air Travel

4.8.1 Activity Data

Client air travel activity data is based on management data tools “Access from Work” and “Cap Data” from American Express which track information on reservations made by all employees. Point to point distances for each origin and destination from flights were obtained for each office to represent air miles.

4.8.2 Emission Factor

Client air travel emission factors for three different flight lengths - less than 300 miles, between 300 and 700 miles and more than 700 miles – were obtained from the US EPA¹³. Within each of these different flight lengths, emission factors for carbon dioxide, methane and nitrous oxide were obtained. Global Warming Potentials (GWPs) from ISO 14064-1¹ were used to sum the emissions from each gas to equivalent CO₂.

¹² United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance - Optional Emissions from Commuting, Business Travel and Product Transport. EPA430-R-08-006, page 5.

¹³ United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance - Optional Emissions from Commuting, Business Travel and Product Transport. EPA430-R-08-006, page 7.

4.9 Paper Usage

4.9.1 Activity Data

Activity data for paper usage is based on paper purchased during the reporting period from two paper vendors – Office Max providing copy paper (0% recycled content) and Mid American Printing providing watermark paper (30% recycled content). The activity data initially obtained was a combination of reams and cartons sold and classified by dimension. The reams and cartons of paper were subsequently converted to sheets using 500 sheets per ream and 5,000 sheets per carton. Since the Paper Calculator outlined in Section 4.9.2 requires units of mass, it was assumed that one square meter of paper weighs 75 grams. This assumption is based on Domtar copy paper. This value was used for both copy and watermark paper. The mass of paper in grams was then converted to metric tons to use as input for the paper calculator.

4.9.2 Emission Factor

The emissions calculated for paper usage are based on a paper calculator from the Environmental Defense Fund¹⁴. The emissions in equivalent pounds of CO₂ are calculated by entering the type of paper (it is assumed that the majority of paper used at Grant Thornton LLP is copy paper), the quantity of paper used (in short tons, metric tons or pounds) as well as the percentage of recycled content. The calculator is based on lifecycle environmental impact studies on paper production and disposal and is mentioned by the World Resources Institute¹⁵.

¹⁴ Environmental Defense Fund (2007). Paper Calculator. Retrieved from <http://www.edf.org/papercalculator/index.cfm>.

¹⁵ World Resources Institute (May 2006). Hot Climate, Cool Commerce: A Service Sector Guide to Greenhouse Gas Management. Page 27. Retrieved from <http://pdf.wri.org/hotclimatecoolcommerce.pdf>

5. GHG Inventory Components

5.1 Emissions

Table 8 identifies the GHG emissions by source in metric tons while Table 9 indicates the metric tons of equivalent CO₂ of GHG by source. More specifically, Table 9 takes into the global warming potentials indicated in Appendix C of ISO 14064-1¹. For example, direct natural gas emissions in Table 8 indicate methane emissions of 0.04 metric tons. Multiplying this value by a global warming potential of 21 provides 0.8 metric tonnes of equivalent CO₂, shown in Table 9.

Table 8 – Metric tons of GHG by source

Emission source	CO ₂	CH ₄	N ₂ O	HFC-32	HFC-125	CO ₂ e
Natural gas(direct)	427	0.04	0.0008	0	0	428
Natural gas (energy indirect)	780	0.1	0.001	0	0	782
Natural gas (other indirect)	15	1	0	0	0	40
Coal (energy indirect)	65	0.01	0.001	0	0	65
Chillers (direct)	0	0	0	0.3	0.3	892
Electricity (energy indirect)	11,410	0.2	0.2	0	0	11,468
Office car commuting (other indirect)	7,990	0.7	0.7	0	0	8,222
Client air travel (other indirect)	7,464	0.4	0.3	0	0	7,577
Client car travel (other indirect)	3,280	0.3	0.3	0	0	3,375
Client train travel (other indirect)	3	0.00003	0.0001	0	0	3
Paper usage (other indirect)	N/A	N/A	N/A	0	0	1,542
Total	31,434	3	2	0.3	0.3	34,395

Note: N/A – information for paper usage was provided in CO₂e only

Table 9 – Equivalent CO₂ (metric tons) of GHG by source

Emission source	CO ₂	CH ₄	N ₂ O	HFC-32	HFC-125	Total	Percentage of total (%)
Natural gas (direct)	427	0.8	0.2	0	0	428	1.24%
Natural gas (energy indirect)	780	1.5	0.5	0	0	782	2.27%
Natural gas (other indirect)	15	24	0	0	0	40	0.12%
Coal (energy indirect)	65	0.1	0.3	0	0	65	0.19%
Chillers (direct)	0	0	0	168	725	892	2.59%
Electricity (energy indirect)	11,410	5	53	0	0	11,468	33.34%
Office car commuting (other indirect)	7,990	14	218	0	0	8,222	23.91%
Air Travel (other indirect)	7,464	9	105	0	0	7,577	22.03%
Client car travel (other indirect)	3,280	6	89	0	0	3,375	9.81%
Client train travel (other indirect)	3	0.0006	0.02	0	0	3	0.01%
Paper usage (other indirect)	n/a	n/a	n/a	0	0	1,542	4.48%
Total	31,434	60	466	168	725	34,395	100.00%

Note: N/A – information for paper usage was provided in CO₂e only

Grant Thornton LLP's total GHG Emissions was reported as 34,395 metric tons of equivalent CO₂. This includes 3.84% of direct emissions from natural gas and chillers, 35.81% of indirect energy emissions from electricity, natural gas and coal and 60.36% of other indirect emissions from office car commuting, client car travel, client air travel, client train travel and paper usage.

Appendix A provides more detailed results of GHG emissions by office.

5.2 Estimation of Uncertainty

ISO 14064-1 requests a description of uncertainties on the accuracy of the GHG emissions data.

Natural gas emissions data has a medium level of uncertainty. Although the emission factors used are considered accurate as they come from the US EPA and the IPCC, the activity data shows some uncertainty as the information was collected through email communication with all offices, where actual bills were not always viewed by the personnel responsible for collecting this activity data.

Electricity emissions data has a medium level of uncertainty. Although the emission factors used are considered accurate as they come from the US EPA, the activity data shows some uncertainty as the information was collected through email communication with all offices, where actual bills were not always viewed by the personnel responsible for collecting this information. Moreover, the GHG Protocol explains there are some inaccuracies for electricity use when an annual average is used for a grid with multiple fuel sources¹⁶, which is the case with many of Grant Thornton LLP offices.

Another uncertainty factor for both natural gas and electricity arises from the three offices for which natural gas or electricity activity data was unavailable. An effort was made to minimize this uncertainty by making estimations for these offices based on energy activity data from other offices with similar climate conditions and hence energy consumptions.

Chiller emissions data has a high uncertainty level. Uncertainty is introduced by the fact that activity data obtained was thermal capacities (chiller sizes) rather than specific refrigerant charges. However, efforts were made to minimize this uncertainty by finding correlations between the thermal capacities and refrigerant charges. As well, a conservative 15% of chiller leakage was used in calculations. It is likely that the actual leakage is less than calculated. Another uncertainty introduced stems from the conservative choice of using a refrigerant with a high GWP. It is likely that some offices use a refrigerant with a smaller GWP, reducing the actual emissions.

Office car commuting has a high uncertainty level. The survey had an average response rate of 48%, meaning that the extrapolation of the total miles for each office introduced some uncertainty. In addition, the make and model of the cars used were not obtained introducing again some uncertainty as some vehicles produce more GHG emissions than others. However, an attempt to minimize this uncertainty was made by using an average GHG emission factor for passenger cars obtained from the US EPA.¹¹ Certain assumptions were also made in the calculation of travel mile activity data that introduces some uncertainty. For example, it was assumed that employees who answered yes to question number 2 "Do you ever use a car to get to the office?" (refer to Appendix E) use their car only to go to and from the office. It is however possible that employees drive to the office, visit a client and then go home. Situations such as this were not taken into account. Nevertheless, the assumption made leads to a more conservative result.

¹⁶ The GHG Protocol Initiative (Sept 2003). Measurement and Estimation Uncertainty of GHG Emissions. Version 1.0. Retrieved from <http://www.ghgprotocol.org/files/ghgp/tools/ghg-uncertainty.pdf>

Client car travel, which is composed of employees using their own vehicle as well as renting a vehicle, has a medium uncertainty level. Client car travel from employees using their own vehicle was obtained from expense reports, which are considered reliable information. However, similar to office car commuting, the make and model of the cars used were not obtained introducing some uncertainty. In addition, other uncertainty is introduced from using an average of 80 miles to represent one day of car rental, obtained from American Express based on several different companies of like industry.

Client air travel and train travel have low uncertainty levels. The emission factors obtained from the US EPA provide reliable sources and the activity data obtained was provided in miles travelled.

Some uncertainty is introduced from neglecting bus, train and subway travel. It is important to note that since bus, train and subway office travel are classified as other indirect emissions as defined in ISO 14064-1¹ and the GHG Protocol², it is not necessary to include these emissions. Moreover, it was assumed that emissions from bus, train and subway office travel were negligible for two reasons. Primarily, emissions from these sources are much less in comparison to that of car office travel. As well, 78% of employees that responded to the survey use a car to go to work.

The calculation of GHG emissions from paper has a high uncertainty level according to the World Resources Institute¹⁵. However, it was considered worthwhile to include these emissions in the inventory as Grant Thornton LLP is an office-based organization that uses a significant quantity of paper.

6. GHG Inventory Quality Management

6.1 GHG Information Management

Grant Thornton LLP’s GHG information is currently managed by several employees depending on the GHG Source. Table 10 shows the sources that encompass Grant Thornton LLP’s greenhouse gas emissions and the person responsible at Grant Thornton LLP for tabulating its activity data for each of the 52 offices.

Table 10 – Person responsible for the activity data of each GHG source

GHG source	Person(s) responsible
Natural gas	Michael Alden, Carrol Gallo
Coal	Michael Alden, Carrol Gallo
Chillers	Michael Alden, Carrol Gallo
Electricity	Michael Alden, Carrol Gallo
Office car commuting	Bryce Gordon
Client car travel	Lisa Reimer
Client train travel	Lisa Reimer
Client air travel	Lisa Reimer
Paper	Kevin Ellison, Martha Morrison

In addition, Kevin Ellison of Grant Thornton LLP was the person responsible for providing a facility list for US Operations as well as the number of full time employees and square footages for each office.

The persons indicated in the table above were responsible for gathering activity data related to each GHG Source. This information was then transmitted to Roger Fournier and Deborah Lobo of Raymond Chabot Grant Thornton who calculated the greenhouse gas emissions and issued this report in compliance with ISO 14064-1¹ and the GHG Protocol². Appendix D provides a checklist demonstrating this report’s compliance with ISO 14064-1.

For the current quantification period, the team of employees listed in the table above regularly communicated through conference calls organized and managed by Grant Thornton LLP’s John Messer to ensure proper GHG information management methods. More specifically, these conference calls ensured:

- The information gathered was in compliance with ISO 14064-1 and consistent with the use envisioned by the GHG Inventory;
- Regular monitoring on the accuracy and completeness of the GHG inventory;
- The identification and treatment of errors and omissions;
- Documentation and record keeping of GHG inventory information.

For subsequent years of the GHG inventory, Kevin Ellison will be the person responsible for ensuring proper GHG information management methods.

Greg Kozak of ERM Certification and Verification Services Limited was retained to provide an independent third party verification for Grant Thornton LLP's GHG Inventory.

6.2 Document Retention and Record Keeping

Activity data for electricity, natural gas, coal and chillers was obtained through communication with independent third party building engineers or property office representatives. Electricity consumption, heat usage as well as the quantity and brand name of chillers that the buildings use was requested by phone and/or email and received through email.

Activity data for office car commuting was obtained through results of an employee survey sent to all Grant Thornton offices. The survey results were recorded in a survey information tool called "Survey Gizmo". The results were exported to Microsoft Excel.

Activity data from employees using their own vehicle for client car travel was collected from expense reports from each office.

Activity data for client car rental travel, air travel and train travel was collected from American Express management data tools "Access from Work" and "Cap Data" which track information on reservations made from all employees.

Activity data for paper consumption was collected from Grant Thornton USA's two paper vendors – Office Max and Mid American Printing in terms of paper purchased during the quantification period.

For record retention policy, Grant Thornton USA has specific guidelines on the systematic review, retention and destruction of particular records. A copy of Grant Thornton's record retention policy is shown in Appendix F.

Appendix A – GHG Emissions by Office

Table 11 – GHG emissions by office

Office	tCO ₂ e by Source									Total tCO ₂ e	Proportion of total
	Natural gas	Coal	Chillers	Electricity	Client air travel	Client car travel	Client train travel	Office car commuting	Paper		
Albuquerque	24.26	0	15.48	114.56	20.39	18.05	0	DNC	9.17	201.92	0.6%
Alexandria	0	0	0	652.61	886.21	72.71	0.45	942.75	78.83	2,633.56	7.7%
Appleton	1.34	0	0	210.80	19.51	43.82	0	81.15	21.04	377.67	1.1%
Atlanta	0.18	0	15.00	248.65	119.34	130.11	0	296.74	36.92	846.94	2.5%
Austin	0.09	0	0.10	0.78	1.24	0.23	0	0.40	0.78	3.62	0.0%
Baltimore	0	0	0	112.34	48.48	66.93	0.04	171.10	22.21	421.11	1.2%
Boston	0	0	17.00	154.40	211.28	145.93	0.07	140.97	48.14	717.80	2.1%
Charlotte	0	0	25.04	467.16	456.49	248.65	0.09	268.81	65.92	1,532.15	4.5%
Chicago	182.88	0	0	769.81	1,036.78	268.13	0.08	172.35	144.70	2,574.74	7.5%
Cincinnati	3.57	0	0	344.75	63.15	69.08	0	160.23	21.22	661.99	1.9%
Cleveland	0	0	0	289.26	115.31	136.95	0	232.27	25.14	798.93	2.3%
Columbia	0	0	0	83.25	22.86	53.64	0	92.24	8.04	260.04	0.8%
Dallas	0	0	36.83	877.98	446.49	144.96	0	599.53	71.99	2,177.78	6.3%
Denver	0	0	17.11	492.56	124.22	66.18	0.08	110.37	21.04	831.55	2.4%
Detroit	70.21	0	26.35	87.54	251.32	87.44	0	322.64	35.42	880.92	2.6%
Edison	0	0	13.58	201.38	48.72	36.59	0	192.41	17.30	509.98	1.5%
Ft. Lauderdale	0	0	18.04	300.42	103.90	81.75	0	226.23	43.01	773.34	2.2%

Office	tCO ₂ e by Source									Total tCO ₂ e	Proportion of total
	Natural gas	Coal	Chillers	Electricity	Client air travel	Client car travel	Client train travel	Office car commuting	Paper		
Greensboro	0	0	5.75	99.16	34.13	8.72	0	DNC	6.54	154.30	0.4%
Honolulu	0	0	0	22.09	64.43	3.01	0	DNC	9.42	98.95	0.3%
Houston	22.56	0	0.00	134.42	398.61	118.53	0	520.85	69.06	1,264.04	3.7%
Irvine	0	0	56.97	94.11	112.07	50.10	0	192.16	25.69	531.10	1.5%
Kansas City	0	0	0	387.13	112.56	69.64	0	179.98	24.50	773.81	2.2%
Los Angeles	0	0	10.33	79.86	124.33	54.92	0	168.37	32.75	470.57	1.4%
Madison	14.36	0	3.70	87.31	26.43	15.62	0	DNC	15.47	162.89	0.5%
McLean	0	0	26.02	276.72	148.97	72.39	0.36	211.25	39.05	774.76	2.3%
Miami	0	0	6.24	114.30	53.31	34.32	0	108.40	5.66	322.23	0.9%
Milwaukee	0	65.49	19.25	92.86	46.96	86.22	0	80.88	25.70	417.35	1.2%
Minneapolis	7.21	0	18.58	387.86	183.96	80.60	0	202.13	5.02	885.36	2.6%
NY-Downtown	578.67	0	78.52	183.75	58.95	57.76	0.13	45.00	101.42	1,104.19	3.2%
NY-Melville	17.17	0	8.51	96.28	371.50	122.33	0.60	95.39	124.67	836.44	2.4%
NY-Midtown	203.41	0	119.26	127.53	30.98	27.13	0.47	111.58	20.51	640.87	1.9%
Oakbrook Terrace	0	0	210.91	1,632.11	97.11	8.28	0	722.52	54.08	2,725.02	7.9%
Oklahoma City	2.97	0	0	210.54	36.31	40.40	0	179.74	33.53	503.49	1.5%
Orlando	0	0	2.32	1.56	13.83	41.84	0	68.11	8.39	136.04	0.4%
Philadelphia	0	0	0	159.87	214.01	228.42	0.17	223.46	62.10	888.04	2.6%
Phoenix	0.12	0	0	172.25	132.27	26.25	0	160.25	22.44	513.58	1.5%
Portland	0	0	6.56	84.63	104.50	17.92	0	33.38	11.53	258.52	0.8%
Raleigh	0	0	0	80.43	60.86	110.43	0	150.88	16.31	418.91	1.2%

Office	tCO ₂ e by Source									Total tCO ₂ e	Proportion of total
	Natural gas	Coal	Chillers	Electricity	Client air travel	Client car travel	Client train travel	Office car commuting	Paper		
Reno	39.43	0	6.80	106.01	33.33	8.72	0	58.64	16.85	269.78	0.8%
Sacramento	0.09	0	0.05	1.63	29.09	0.64	0	12.65	0.43	44.58	0.1%
Saint Louis	0	0	1.55	49.72	51.43	27.52	0	22.51	12.05	164.78	0.5%
Salt Lake City	10.84	0	6.42	8.41	73.36	12.04	0	93.05	1.22	205.34	0.6%
San Antonio	0	0	4.87	134.70	27.81	27.27	0	1.93	3.35	199.93	0.6%
San Diego	0.95	0	22.08	14.37	169.72	108.57	0	47.10	24.55	387.35	1.1%
San Francisco	61.09	0	14.56	115.21	87.87	37.89	0	47.38	12.89	376.89	1.1%
San Jose	0	0	6.39	62.87	139.98	41.85	0	74.87	22.41	348.37	1.0%
Seattle	0	0	11.19	98.38	8.38	14.61	0	59.22	3.91	195.70	0.6%
Tampa	0	0	3.40	116.05	51.41	64.42	0	90.35	13.51	339.13	1.0%
Tulsa	0	0	16.75	361.03	40.08	43.63	0	104.43	28.99	594.92	1.7%
Washington DC	0.04	0	28.92	251.65	106.32	0.45	0	13.79	13.14	414.31	1.2%
Wichita	2.68	0	4.18	209.87	42.78	22.27	0	110.62	1.51	393.91	1.1%
Woodland Hills	5.22	0	7.78	5.45	41.77	17.62	0	21.40	2.58	101.82	0.3%
Other	0	0	0.00	0.00	272.35	1.77	0	0	0	274.12	0.8%
Total	1,249.32	65.49	892.40	11,468.33	7,577.47	3,375.27	2.54	8,222.48	1,542.12	34,395.45	100.0%

Note:

DNC – Data not collected

Other – Air travel and car travel emissions by non Grant Thornton employees (contractors, recruits) were not attributed to a particular office, but still included in the inventory

Appendix B – Emission Factors

Table 12 – Emission factors

Emission source	Emission factor	Reference
Natural gas (combustion)	53.06 kg CO ₂ /MMBTU 5 g CH ₄ /MMBTU 0.1 g N ₂ O/MMBTU	United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Direct Emissions from Stationary Combustion Sources, pages 21 and 27.
Natural gas (production)	0.00019 tCO ₂ /therm 0.0000145 tCH ₄ /therm	International Panel on Climate Change (2006). IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 4 – Fugitive Emissions, pages 48 to 50.
Coal	103.62 kg CO ₂ /MMBTU 11 g CH ₄ /MMBTU 1.6 g N ₂ O/MMBTU	United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Direct Emissions from Stationary Combustion Sources, pages 21 and 27.
Electricity	Emission factors vary by region	United States Environmental Protection Agency (eGRID2010 Version1.0). eGRID2010 Year 2007 Summary Tables, page 1, Retrieved from http://www.epa.gov/cleanenergy/documents/egridzips/eGRID2010V1_0_year07_SummaryTables.pdf
Client air travel Long haul (≥ 700 miles)	0.185 kg CO ₂ /passenger-mile 0.0104 g CH ₄ /passenger-mile 0.0085 g N ₂ O/passenger-mile	United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance - Optional Emissions from Commuting, Business Travel and Product Transport. EPA430-R-08-006, page 7.
Client air travel Medium haul (300-700 miles)	0.229 kg CO ₂ /passenger-mile 0.0104 g CH ₄ /passenger-mile 0.0085 g N ₂ O/passenger-mile	
Client air travel Short haul (< 300 miles)	0.277 kg CO ₂ /passenger-mile 0.0104 g CH ₄ /passenger-mile 0.0085 g N ₂ O/passenger-mile	

Emission source	Emission factor	Reference
Office car commuting and client car travel	0.364 kg CO ₂ /vehicle-mile 0.031 g CH ₄ /vehicle-mile 0.032 g N ₂ O/vehicle-mile	United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance - Optional Emissions from Commuting, Business Travel and Product Transport. EPA430-R-08-006, page 3.
Client train travel	0.185 kg CO ₂ /passenger-mile 0.002 g CH ₄ /passenger-mile 0.001 g N ₂ O/passenger-mile	United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance - Optional Emissions from Commuting, Business Travel and Product Transport. EPA430-R-08-006, page 5.
Chillers	15% leakage/year	United States Environmental Protection Agency (May 2008). Climate Leaders: Greenhouse Gas Inventory Protocol Core Module Guidance – Direct HFC and PFC Emissions from Use of Refrigeration and Air Conditioning Equipment. EPA430-K-03-004, page 11.
Paper usage	Online tool calculations emissions in CO ₂ e	Environmental Defense Fund (2007). Paper Calculator. Retrieved from http://www.edf.org/papercalculator/index.cfm .
100 year GWP CO ₂	1	ISO 14064-1:2006. Greenhouse Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. Appendix C.
100 year GWP CH ₄	21	
100 year GWP N ₂ O	310	
100 year GWP HFC 410A	1,725 (based on average of GWPs of HFC-32 and HFC-125)	

Notes:

MMBTU = 1,000,000 BTU

Appendix C – Greenhouse Gas Activity Data

Table 13 – GHG activity data by office

Office	Natural gas (therms)	Coal (therms)	Number of chillers	Electricity (kWh)	Client air travel (miles)	Client car travel (miles)	Client train travel (miles)	Client car commuting (miles)	Paper (sheets)
Albuquerque	4,175	0	2	200,746	106,489	48,192	0	DNC	680,800
Alexandria	0	0	0	1,279,133	4,696,789	194,118	2,416	2,516,879	5,581,270
Appleton	231	0	0	297,920	99,760	116,986	0	216,659	1,555,060
Atlanta	31	0	3	364,578	622,392	347,363	0	792,220	2,725,935
Austin	15	0	6	1,373	5,928	622	0	1,072	57,000
Baltimore	0	0	0	232,512	257,042	178,693	231	456,780	1,638,070
Boston	0	0	4	408,000	1,106,598	389,596	364	376,363	3,494,300
Charlotte	0	0	2	915,641	2,350,532	663,815	462	717,646	4,815,620
Chicago	31,468	0	0	1,087,954	5,403,527	715,838	422	460,134	10,602,824
Cincinnati	614	0	0	487,222	320,711	184,412	0	427,771	1,522,010
Cleveland	0	0	0	408,805	595,176	365,616	0	620,093	1,849,130
Columbia	0	0	0	163,181	119,540	143,192	0	246,262	590,300
Dallas	0	0	4	1,539,529	2,328,332	387,010	0	1,600,585	5,273,070
Denver	0	0	3	493,963	654,608	176,680	416	294,663	1,541,785
Detroit	12,080	0	2	116,227	1,312,700	233,452	0	861,359	2,610,725
Edison	0	0	2	416,803	257,700	97,696	0	513,671	1,260,000
Ft. Lauderdale	0	0	1	540,347	547,289	218,251	0	603,975	3,150,010
Greensboro	0	0	2	194,356	174,761	23,290	0	DNC	482,060

Office	Natural gas (therms)	Coal (therms)	Number of chillers	Electricity (kWh)	Client air travel (miles)	Client car travel (miles)	Client train travel (miles)	Client car commuting (miles)	Paper (sheets)
Honolulu	0	0	0	29,892	339,240	8,039	0	DNC	676,000
Houston	3,882	0	2	235,713	2,079,220	316,442	0	1,390,516	5,031,500
Irvine	0	0	3	303,549	592,776	133,759	0	513,007	1,862,390
Kansas City	0	0	0	471,997	594,331	185,923	0	480,489	1,801,905
Los Angeles	0	0	2	257,591	654,040	146,621	0	449,509	2,394,130
Madison	2,471	0	2	113,092	138,816	41,697	0	DNC	1,147,600
McLean	0	0	2	542,374	781,029	193,264	1,948	563,989	2,873,030
Miami	0	0	2	205,578	281,443	91,637	0	289,406	409,090
Milwaukee	0	6,276	4	131,232	244,537	230,179	0	215,926	1,880,980
Minneapolis	1,240	0	5	480,000	950,383	215,191	0	539,639	421,105
NY-Downtown	108,781	0	1	573,465	311,409	154,194	695	120,130	7,388,000
NY-Melville	2,954	0	2	148,989	1,936,443	326,584	3,220	254,677	9,102,865
NY-Midtown	38,238	0	6	398,003	162,509	72,435	2,541	297,878	1,498,845
Oakbrook Terrace	0	0	9	2,306,617	512,470	22,101	0	1,928,921	3,855,115
Oklahoma City	512	0	0	284,508	191,999	107,845	0	479,852	2,475,150
Orlando	0	0	2	2,801	72,931	111,695	0	181,844	621,165
Philadelphia	0	0	0	330,889	1,123,746	609,810	920	596,589	4,558,740
Phoenix	21	0	0	301,823	689,809	70,084	0	427,813	1,650,480
Portland	18	0	2	215,510	547,484	47,829	0	89,126	850,635
Raleigh	0	0	0	157,655	318,603	294,807	0	402,818	1,187,210
Reno	6,784	0	1	270,712	177,126	23,284	0	156,550	1,249,080

Office	Natural gas (therms)	Coal (therms)	Number of chillers	Electricity (kWh)	Client air travel (miles)	Client car travel (miles)	Client train travel (miles)	Client car commuting (miles)	Paper (sheets)
Sacramento	15	0	1	5,247	154,334	1,715	0	33,764	32,000
Saint Louis	0	0	2	61,270	270,606	73,482	0	60,096	892,950
Salt Lake City	1,865	0	1	21,482	385,628	32,142	0	248,413	90,000
San Antonio	0	0	3	236,203	145,977	72,802	0	5,145	242,120
San Diego	164	0	1	46,344	894,497	289,862	0	125,731	1,804,830
San Francisco	10,512	0	2	371,586	464,757	101,157	0	126,485	955,668
San Jose	0	0	2	202,791	741,732	111,730	0	199,880	1,647,270
Seattle	18	0	2	248,867	41,328	39,014	0	158,090	286,803
Tampa	0	0	2	208,725	269,932	171,973	0	241,205	983,135
Tulsa	0	0	2	487,852	208,382	116,486	0	278,801	2,114,060
Washington DC	6	0	2	520,846	558,592	1,211	0	36,827	960,635
Wichita	460	0	1	255,878	222,253	59,467	0	295,328	127,158
Woodland Hills	897	0	2	17,566	221,965	47,038	0	57,138	190,000
Other	0	0	0	0	5,928	4,720	0	0	0
Total	227,452	6,276	99	19,594,936	38,246,129	9,011,042	13,635	21,951,715	112,691,613

Notes:

- DNC – Data not collected
- Commuting miles shown are extrapolated values
- Other – Air travel and car travel activity data by non Grant Thornton employees (contractors, recruits) were not attributed to a particular office, but still included in the inventory

Appendix D – Standard Reporting Declaration

Subsection in 8.2 of ISO 14064-1	Description	Response
A	Description of reporting organization	Refer to Section 2
B	Person responsible	John Messer, Grant Thornton LLP
C	Reporting period	August 1, 2009 to July 31, 2010
D	Organizational boundaries	Refer to Section 3.1
E	Direct emissions quantified separately for each GHG	Refer to Section 5.1
F	Description of how combustion from biomass was treated	Grant Thornton LLP does not have any emissions from the combustion of biomass
G	If quantified, removals of GHG in tCO ₂ e	Not applicable
H	Explication of exclusion of any source or sink of GHG	Emissions from bus, train and subway were excluded as emissions from these sources are considered negligible in comparison to emissions from other forms of travel. Refer to section 5.2.
I	Energy indirect GHG emissions associated with the production imported electricity, heat or vapour in tCO ₂ e	Refer to Section 5.1
J	Historical base year	August 1, 2009 to July 31, 2010
K	Explanation of any base year modifications	Refer to Section 2
L	Reference to quantification methodologies	ISO 14064-1 and GHG Protocol
M	Explanation of any change to quantification methodologies used	No changes to quantification methodologies used
N	Emission Factor references	Refer to Appendix B
O	Description of impact of uncertainties	Refer to Section 5.2
P	Statement indicating the report conforms to ISO 14064-1	Refer to Section 6.1
Q	Statement indicating if the inventory was verified including the type of verification and level of assurance	Greg Kozak of ERM Certification and Verification Services Limited was retained to provide an independent third party verification for Grant Thornton LLP's GHG Inventory with a reasonable assurance

Appendix E – Office Travel Commuting Survey

Employee Survey – How do you normally get to the office?

1. What is your office location?

Alexandria	Irvine	Raleigh
Appleton	Kansas City	Reno
Atlanta	Los Angeles	Sacramento
Austin	McLean	Salt Lake City
Baltimore	Miami	San Antonio
Boston	Milwaukee	San Diego
Charlotte	Minneapolis	San Francisco
Chicago	New York - Downtown	San Jose
Cincinnati	New York - Melville	Seattle
Cleveland	New York - Midtown	Southfield (Detroit)
Columbia	Oak Brook Terrace	St Louis
Dallas	Oklahoma City	Tampa
Denver	Orlando	Tulsa
Edison	Philadelphia	Washington DC
Fort Lauderdale	Phoenix	Wichita
Houston	Portland	Woodland Hills

2. Do you ever use a car to get to the office?

- a) Yes
- b) No

If you answered “Yes” to question 2, please respond to the following:

3. What is the distance travelled between your home and office (one way):

- a) 0-10 miles
- b) 10-25 miles
- c) 25-50 miles
- d) 50-100 miles

4. How many days a week on average do you go to the office?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
 - e) 5

5. Considering the number of days you go to the office in a year, what proportion (in %) do you use a car to get to the office?
 - a) 0-25%
 - b) 25-50%
 - c) 50-75%
 - d) 75-100%

6. Do you car pool?
 - a) Yes
 - b) No

If you answered “Yes” to car pool, please respond to the following questions:

7. Considering the number of days you use a car to go to the office in a year, what proportion (in %) do you car pool?
 - a) 0-25%
 - b) 25-50%
 - c) 50-75%
 - d) 75-100%

8. Considering the amount of time that you car pool, what proportion (in %) are you the driver?
 - a) 0-25%
 - b) 25-50%
 - c) 50-75%
 - d) 75-100%

9. Excluding yourself, how many coworkers are in the car?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
 - e) 5

Appendix F – Grant Thornton LLP – Record Retention Policy

GRANT THORNTON LLP RECORD RETENTION POLICY

I. Introduction and Objectives

Numerous records are created as a regular part of Grant Thornton's business. Certain records must be maintained for continued use or as specified by applicable laws or contract requirements. Others outlive their usefulness and may be destroyed on a regular basis. This Policy sets forth the guidelines for systematic review, retention and destruction of particular records.

This Policy has a number of important objectives, including:

- (1) facilitating retrieval of business records when necessary;
- (2) ensuring that certain records are retained in accordance with federal and state laws (including applicable statutes of limitations);
- (3) preserving documents involved in pending judicial or regulatory proceedings or investigations;
- (4) providing documentation and evidence in support of professional services rendered; and
- (5) providing for the routine destruction of documents to save storage costs as well as to eliminate unnecessary inventories of documents.

Grant Thornton's policy is to destroy on a regular basis all records except those specifically authorized to be preserved by this Policy. Our policy takes into account several factors unique to our Firm or brought about by advances in technology, as set forth in the guidelines below.

THIS RECORD RETENTION POLICY COVERS GRANT THORNTON DOCUMENTS ONLY. AS DISCUSSED BELOW, THE RECORD RETENTION REQUIREMENTS FOR CLIENT RELATED DOCUMENTS, INCLUDING WORKPAPERS, SHALL BE GOVERNED BY AICPA PROFESSIONAL STANDARDS, AS SET FORTH IN THE AUDIT AND ASSURANCE SERVICES MANUAL.

II. General Guidelines

What Constitutes A Record?

We are accustomed to thinking of records as paper documents. Records also consist, however, of e-mails and other information maintained on electronic storage media. Grant Thornton's record retention policy encompasses both papers and other hard copies as well as information stored on diskettes, hard drives, magnetic tapes and other computer-related storage media.

In either hard copy or electronic form, records tend to be copied for various purposes. This Policy covers not only the originals of records but all copies as well, whether they are exact duplicates of the originals or bear notes or changes.

Copies of documents are often inserted into multiple files. This Policy encompasses copies of documents placed in all such files, including personal files, chronological files and all files that might be separately maintained by more than one person with respect to the same matter. The Policy also applies to documents or portions of documents attached to or embedded electronically in other documents.

Location of Records

This Policy applies to records kept both on and off Grant Thornton's premises. On-site locations refer to Grant Thornton offices and may include file cabinets, file rooms, server rooms and any other places in

which records, including computer materials, are stored. Off-site locations include all locations other than Grant Thornton's premises and may include home offices, archival facilities, warehouses and similar repositories, as well as laptop computers and places in which computer back-ups may be stored.

Implementation of the Policy

All Office Managing Partners, practice leaders or department heads shall communicate this Policy to members of their offices, departments or practice groups and shall implement a regular review to ensure compliance with the specific guidelines below. Such review should include a periodic inspection of files located on and off Grant Thornton premises and systematic follow-up and confirmation with personnel who may not regularly report to a particular operating office.

This retention policy or any part of it may be suspended at any time upon the written directive of the Chief Legal Officer. Each office, department and practice group shall retain copies of this Policy and all such written directives of the Chief Legal Officer and shall follow them scrupulously. Questions regarding this Policy or its implementation should be directed to the Legal Department.

Means of Record Destruction

When destruction of records is called for by this Policy, they should be destroyed in a secure manner. Documents with confidential or sensitive information should be shredded and other documents should be disposed of in appropriate trash receptacles. Computer-based materials shall be destroyed in a manner that ensures permanent erasure of the information from the media on which it was stored. It is important to note that deleting information, such as an e-mail, does not necessarily eliminate the information from the system. Pursuant to firm policy, the "Deleted Items" basket in Outlook will be purged periodically to permanently remove dated items from the system. Items sought to be maintained must be specifically designated for retention to survive the periodic purge. In addition, a clean-up of computer-based files, involving the deletion of all items including those in the "Deleted Items" basket in Outlook, will occur upon the regular rotation of computers pursuant to the firm's Information Technology Modernization Initiative. The Information Technology department can assist with permanent elimination of items at times other than the periodic purge and the regular rotation of notebooks and desktops.

Special Situations

The guidelines set forth below should encompass most requirements for document retention. Certain situations, however, alter the retention requirements. For example, many states have their own record retention laws. To the extent that state laws impose additional record retention requirements, those laws will be followed. If information comes to the attention of Grant Thornton personnel that the retention requirements of a particular state's laws are more stringent than the guidelines set forth in this Policy, the Legal Department should be contacted to address questions regarding the requirements of such laws.

Litigation may also impose special record retention requirements. These requirements must be followed as well. Once again, the Legal Department is available to assist and coordinate compliance with record retention requirements imposed in litigation and similar proceedings.

Employee Communications

Any questions regarding this Policy should be directed to the Legal Department. Likewise, if an employee has any questions about the *preparation* or *wording* of records, particularly records involving marketing efforts, software design, personnel evaluations or other sensitive topics, he or she should also consult the Legal Department.

All managing partners, practice leaders and department heads should advise their employees to use care in the creation of records. Certain communications, including those that are discriminatory or disparaging, are not permissible. Sloppy language or a poor choice of words can inadvertently cause communications that are entirely proper to be misconstrued as unethical or illegal. This is

particularly applicable in the case of e-mail communications. It has been suggested that employees may sometimes be less careful when using e-mail in the belief that such communications are not in hard copy form and are not permanently stored. As discussed above, however, deletion of e-mails does not necessarily eliminate them from the computer system.

Unnecessary records should not be created at all because they result in excess facilities expenses and make record organization and retrieval unduly cumbersome and unwieldy. Unnecessary records may include, among others, personal communications or documents created when verbal communication will suffice. Such records may also be subject to the discovery process in litigation, requiring, at a minimum, time-consuming and expensive review procedures to determine their responsiveness to discovery requests.

III. Specific Retention Guidelines

Client-Related Records

As a professional services firm, Grant Thornton creates or receives client-related documents as well as documents for purposes internal to the Firm. The Firm's policy with respect to client-related records (workpapers, reports, etc.) is set forth in Appendix E to the Grant Thornton LLP Audit and Assurance Services Manual and should be carefully followed. To the extent questions arise with respect to retention of client-related documents, or in the event of conflict between this Policy and the Audit and Assurances Manual, contact the Chief Legal Officer, the appropriate Regional Director of Assurance Services and/or the office managing partner.

Firm-Related Records

In many instances, records are copied, either by photocopy or electronically. Grant Thornton's policy is to keep only one of each record, unless maintenance of additional copies is necessary for business or legal reasons. In such cases, only the minimum number of copies necessary for the purpose at hand should be kept. Copies that bear separate notes must be maintained as well.

Ideally, the original of a record should be retained. In some instances, the original will be readily identifiable, such as a letter or contract bearing signatures in ink. In other situations, however, the "original" record may be sent outside the firm, or it may be difficult to determine which version of a record is the original, particularly if the record is created electronically and remains on the system but is also printed in hard copy form.

In such circumstances, only one version of the record should be retained. In situations in which the "original" is sent outside the firm, e.g., a letter, a hard copy of the record should be maintained and all other versions, including the electronic version in the word processing system, should be destroyed. In situations in which a record is created only electronically, e.g., an e-mail, the record may be maintained on the system or printed and stored in hard copy form. Care should be taken with respect to records maintained electronically, however, because computer files will be purged upon the planned regular rotation of computer equipment. Records which must be maintained but would be eliminated upon a change of computer equipment can either be designated to survive the purge or printed and stored in hard copy form.

In all events, prior draft versions of records, whether in electronic or hard copy form, should be destroyed immediately after a final version is created.

Many of the records listed below are maintained in the National Office. Except as necessary for business or legal reasons, all other copies of such records should be destroyed as soon as the purpose for which they are used has been accomplished or abandoned.

With respect to records maintained in locations other than the National Office, once again only one of each record should be maintained, except when business or legal reasons dictate otherwise, and all

copies should be destroyed as soon as the purpose for which they are used has been accomplished or abandoned.

The following specific retention periods apply to each type of record listed below and represent minimum retention periods:

DOCUMENT RETENTION REQUIREMENTS

<u>Type of Document</u>	<u>Retention Period</u>
I. <u>Organizational and Operating Documents*</u>	
A. Partnership agreement, Secretary of State or equivalent agency filings, qualifications to do business in foreign jurisdictions (applications and letters of authorization)	Permanent
B. Application for Federal Employee Identification Number and Letter Assigning each number	Permanent
C. Minutes and resolutions of meetings of the Executive Committee, Leadership Team and committees and subcommittees of the Executive Committee and Leadership Team; resolutions of the partners; minutes of annual partners' meeting	Permanent
D. Leases (real estate; equipment)	8 years after expiration
D. Business plans, budgets, marketing plans, market analyses, strategic plans	2 years after obsolete
E. Draft notes or other recordings of firmwide meetings	Destroy after finalization of minutes
F. Firmwide management policies, Statements of Firm procedures	Consult the Legal Department
G. Grant Thornton Annual Reports	Permanent
H. Federal and State Licenses/Permits/ Permanent Certifications/Qualifications (including initial and renewal applications and supporting documentation)	Permanent
I. Documents relating to peer reviews of Grant Thornton	Permanent

* These records shall be maintained in the National Office. Office managing partners and practice leaders may retain copies only as necessary for business purposes and shall destroy such copies as soon as the business purpose has been accomplished or is no longer operative.

Insurance*

A. Insurance policies (Commercial General Liability,	Consult the Legal Department
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Professional Liability, Worker's
Compensation, Casualty, Fire, etc.)

B.	Accident reports	7 years
C.	Fire inspection reports	7 years
D.	Group disability reports	7 years
E.	Safety reports	7 years
F.	Claims files (all claims except OSHA claims, see Section VI.C below)	2 years after resolution or settlement; consult Legal Department regarding securities and professional liability claims
G.	Claims releases, settlement papers	Permanent

* These records shall be maintained in the National Office. Office managing partners and practice leaders may retain copies only as necessary for business purposes and shall destroy such copies as soon as the business purpose has been accomplished or is no longer operative.

II. Tax and Financial Records*

A.	Tax returns (or information returns) and supporting working papers*	7 years
B.	Definitive correspondence concerning the payment or refund of taxes, or status under the tax laws of federal, state or local jurisdictions; Revenue Agents' reports or letters relating to audits*	Permanent
C.	General ledger, general journal, and other documentary materials necessary to demonstrate the accuracy of any tax or informational return*	7 years
D.	Tax payment checks*	7 years
E.	Withholding tax records*	7 years after due date of tax or date tax is paid, whichever is later
F.	Annual financial statements*	Permanent
G.	Subsidiary ledgers*	7 years
H.	Cancelled notes*	Permanent
I.	Travel and entertainment records*	7 years
J.	Reports of internal or independent audits of Grant Thornton*	Permanent
K.	Bank statements, canceled checks	7 years

and deposit slips

- | | | |
|----|----------------------------------|----------------------------------|
| L. | Vouchers and receipts | 7 years |
| M. | Purchase orders for fixed assets | 5 years after purchase completed |

* Records in this section marked with an asterisk shall be maintained in the National Office. Office managing partners and practice leaders may retain copies only as necessary for business purposes and shall destroy such copies as soon as the business purpose has been accomplished or is no longer operative.

- | | | |
|----|---|---|
| N. | RFPs issued by Grant Thornton* | 5 years after project completed |
| O. | Vendor responses to Grant Thornton RFPs* | 1 year for vendors not selected
5 years after project completion
for vendors selected |
| P. | Product rejections, damage reports,
claims | 2 years after resolution |
| Q. | Postage meter records | 7 years |
| R. | Records pertaining to accounts payable
and accounts receivable | 7 years |
| S. | Records pertaining to investments* | Permanent |

III. Internal and External Publications and Communications

- | | | |
|----|---|---|
| A. | Newsletters, press releases, speeches,
statements, manuals | 5 years after no longer used |
| B. | Marketing brochures and materials | 5 years after no longer used |
| C. | Proposals, responses to client RFPs | 1 year if Grant Thornton not
selected; 5 years after completion
of engagement or as provided
in engagement letter/contract
if Grant Thornton selected |
| D. | Artwork, logos, stationery | When no longer used |
| E. | Internet publications | 5 years after revision or no
longer used |

IV. Legal*

- | | | |
|----|---|--|
| A. | Non-disclosure or confidentiality agreements | 5 years after expiration or length
of survival period |
| B. | Contracts and purchasing documents
(including letters of intent,
letter agreements, etc.) | 5 years after expiration or
termination |

C.	Pricing models, calculations, contract backup	5 years after expiration or termination of associated contract
D.	Lobbying reports, if applicable	7 years
D.	Governmental orders, compliance statements, etc.	Permanent
E.	Investigations or audits by governmental agencies, organizations or departments	20 years
F.	Assignments (non-intellectual property)	Life of the assignment plus 5 years
G.	Closing documents for alliances, acquisitions, mergers, consolidations, reorganizations, and dissolutions; regulatory filings re same	Permanent
H.	Due diligence files	5 years after deal closed
I.	Filings with regulatory bodies (other than as described in G above)	until relevant regulation superseded
J.	Government contract disputes (notices, correspondence with contracting officer, documents relating to pertinent board of contract review or appeals)	6 years after resolution or settlement
K.	Intellectual property assignments and licenses (including invention assignments)	Permanent
L.	Litigation files (complaints; discovery; motions/memoranda; research; releases, settlements)	Permanent
M.	Initial and renewal applications, registration certificates and ongoing compliance filings for copyrights, patents, trademarks, servicemarks and licenses	Permanent

* These records shall be maintained in the Legal Department. Office managing partners and practice leaders may retain copies only as necessary for business purposes and shall destroy such copies as soon as the business purpose has been accomplished or is no longer operative.

N.	Real property deeds, titles and mortgages	Permanent
O.	Conflict of Interest waivers	Permanent
P.	Any other documents required to be kept under federal or state law	Consult Legal Department for guidelines

VI. Human Resources

A. Employee benefits

- | | | |
|----|--|-----------------------------------|
| 1. | Disability and sick benefits files | 5 years after employee separation |
| 2. | Employee group insurance cost data | 6 years |
| 3. | Employee medical folders, benefits files | 5 years after employee separation |
| 4. | Government filings (5500's, etc.) | 7 years |
| 5. | Group life and hospital claims | 6 years |
| 6. | Pension plan application and claims | Permanent |
| 7. | Pension Plan Document | Permanent |
| 8. | Welfare Benefit Plans | Permanent |

B. Employee Relations

- | | | |
|----|---|---------|
| 1. | Affirmative action plans and Form 100 (EEO-1) | 2 years |
| 2. | EEO discrimination case files | 7 years |

C. Personnel

- | | | |
|----|--|---|
| 1. | Employment contracts | 7 years post separation |
| 2. | Offer Letters and Non-Compete Agreements | 7 years post separation |
| 3. | Payroll records | Current plus 6 years |
| 4. | Disability and sickness benefits and payments, Family Medical Leave | Current plus 6 years |
| 5. | Personnel files, including attendance records and evaluations ¹ | 7 years post separation |
| 6. | Employee compensation rate and deduction authorizations | 6 years after employment termination |
| 7. | Retirement and pension records | 6 years after employee's death |
| 8. | Records of occupational injury and illness required to be | 5 years following end of year to which records relate |

¹ Refer to HR Protocol for more details

maintained by OSHA

- | | | |
|-----|--|---|
| 9. | Employment records relating to wages, hours, sex, occupation, conditions of employment; wage rate tables; work time schedules, lab evaluations, merit or seniority systems, records of deductions, description or explanation of wage differentials to employees of the opposite sex and other records required to be maintained by the Employment Standards Administration, Department of Labor | 4 years after employment termination |
| 10. | Resumes, applications and other material where person not hired | If not hired, 2 years from date of personnel action to which record relates |
| 11. | Resumes, applications and other material where person is hired | If hired, 7 years post separation |
| 12. | Conflict of Interest statements | 2 years after employment termination |
| 13. | Immigration Reform and Control Act Form I-9 & eVerify | 3 years after date of hire or 1 year after separation, whichever occurs later |
| 14. | Employee manuals, handbooks, policies and procedures | 5 years after revision |
| 15. | Job descriptions/classifications | 5 years after revision or no longer in use |
| 16. | Actuarial records | Permanent |
| 17. | Continuing education records | 5 years from the end of the calendar year to which the records pertain ² |
| D. | Records Relating to Partners, Principals and Professional Staff (not otherwise included above) | |
| 1. | Partner or principal files, agreements | Life of partner or principal plus seven years ³ |
| 2. | Continuing education records | 5 years from the end of the calendar year to which the records pertain ² |

² The five-year retention period is prescribed by the AICPA's SEC Practice Section continuing education policy. Each Grant Thornton professional should determine whether the State Board of Accountancy in the state(s) in which the professional is licensed prescribes a different record retention period or ties the retention requirement to a date other than calendar year-end. Licensed attorneys should similarly check with the applicable state bar association(s) to determine the retention period for records relating to continuing education.

³ Refer to HR Protocol for more details

3. Time sheets and expense reports 5 years

VII. Technology and Electronic Media – Third Party Products and Services

- A. Performance reports and logs Life of product
- B. Source code/object code and accompanying documentation 5 years after software no longer used
- C. Development materials and specs Life of product
- D. Acceptance reports on third party's product 5 years after expiration of purchase/license contract
- E. Procedure manuals 5 years after product, software, etc. obsolete or no longer used

VIII. Research and Development – Products Developed by Grant Thornton LLP

- A. Performance reports and logs 2 years
- B. Source code/object code and accompanying documentation Life of product
- C. Development materials and specs Life of product
- D. Procedure manuals Life of product

IX. General Correspondence/Memoranda

- A. Letters or memoranda that constitute all or part of a contract or which clarify certain points in a contract Corresponds to the retention period for the principal record
- B. Letters or memoranda that constitute all or part of any other official document or which clarify certain points in the document Corresponds to the retention period for the principal record
- C. Letters or memoranda pertaining to patents, copyrights, trademarks, licensing agreements, bills of sale, permits, etc. Corresponds to the retention period for the principal record
- D. Correspondence or memoranda regarding disputes with clients, vendors, other third parties 10 years after dispute resolved

- X. General Support Material (unless contains information otherwise covered herein, in which case apply time frame for that type of record)
- A. Electronic mail
As elsewhere provided in this Policy if e-mail replaces paper record, otherwise delete when purpose of communication is finalized, and deleted materials will be purged on regular basis as provided above
 - B. Calendars
1 year or less; calendars maintained in Outlook will be permanently deleted upon rotation of notebooks/desktops
 - C. Diaries (including “Franklin Planner” type)
1 year or less
 - D. Notepads
1 year or less
 - E. Telephone answer pads/books
1 year or less
 - F. Hand held computers such as “Palm Pilots”
Retention period is as specified elsewhere in this Policy with respect to the type of information stored in the Palm Pilot. Palm Pilots should be purged simultaneously with the regular rotation of notebooks and re-synchronized with the notebook following such purge.