

COMPARISON TASK LIST

Green Shoot		
Task	Detail	Emission
Hotel	4 people * 4 nights	
Flights	3 people from LA to Toronto	2446.98
Commute	80 People * avg.	
Vehicle Transport	9 cars to and from set 20 km total 2 utility vans 40 km * 4 days 3 Hyundai SUV 40km * 4 days	
Equipment	1 propane powered forklift 1 propane powered scissor lift 2 propane zoom boom 2 generators (Honda 2000) used 2 hours per day * 4 days 20% scrubber reduction	2 gal per day 2 gal per day 4 gal per day
Waste	Garbage: 3260 lbs Plastic bottles: zero Paper used: zero	

Traditional Shoot*		
Task	Detail	Emission
Hotel	4 people (2 nights * 3 shoots)	
Flights	3 People from LA to Toronto	2446.98
Commute	location 1: 40 people, 20km, 2.5days location 2: 40 people, 20km, 2.5days location 3: 40 people, 80km, 2.5days	
Vehicle Transport	4 cars to and from set 20 km total (* 3 shoots) 2 utility vans 40km* 7.5days Russian Crane arm SUV 14 hours per day * 2.5 days per shoot *3 shoots Process Trailer 14 hours per day * 2.5 days per shoot *3 shoots 3 hyundai suv* 40km* 7.5days	
Equipment	1200 amp diesel generator 500 amp diesel generator 200 amp diesel generator 2 propane zoom boom 2 gas generators (Honda 2000) used 2 hours per day * 2.5 days per shoot * 3 shoots Trailer Gen Diesel 1 propane powered forklift 1 propane powered scissor lift	
Waste	Garbage: 3360 lbs Plastic Bottles: 4800 Paper used 300 sheets *7.5 days = 2250 sheets / 500 sheets per ream = 4.5	

*Traditional shoot is based on estimates made by the producer and production company had the shoot been completed in the usual manner; i.e. 3 shoots of 2.5 days in length each at separate locations.

HOTEL

Formula: $HS * Elh / 365 * N * Efg$

HS = Hotel Sq. Ft

Elh = Electric intensity for hospitality building

N = Annual # Hotel Nights

Efg = Egrid national average (MT CO2/MWh)

Green Shoot	
Hotel Square Feet	325
Electric Intensity for Hospitality Building	17.7
Annual # Hotel Nights	16
Egrid National Average (MT CO2/MWh)	0.0002
Total mt CO2e:	0.0562

Traditional Shoot*	
Hotel Square Feet	325
Electric Intensity for Hospitality Building	17.7
Annual # Hotel Nights	24
Egrid National Average (MT CO2/MWh)	0.0002
Total mt CO2e:	0.0843

FLIGHT TRAVEL

Formula: $E = PMT * (EFCO2 + EFCH4 * 0.021 + EFN20 * 0.310)$

E = Total CO2 equivalent Emissions

PMT = Passenger Miles Traveled

EFCO2 = CO2 Emission Factor

EFCH4 = CH4 Emission Factor

EFN20 = N2O Emission Factor

0.021 = Conversion Factor

0.310 = Conversion Factor

Green Shoot	
Los Angeles to Toronto	
People	3
Miles	2171
2 way distance (miles)	4342
Passenger Miles traveled	13026
CO2 Emission Factor	0.185
CH4 Emission Factor	0.0104
N2O Emission Factor	0.0085
Total CO2e kg:	2446.9784

Traditional Shoot*	
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Miles	2171
2 way distance (miles)	4342
Passenger Miles traveled	13026
CO2 Emission Factor	0.185
CH4 Emission Factor	0.0104
N2O Emission Factor	0.0085
Total CO2e kg:	2446.9784

Airline Travel Distance	CO2 Emissions factor (kgCO2/Passenger-Mile)	CH4 Emissions Factor (gCH4/Passenger-mile)	N2O Emissions Factor (gN2O/Passenger-mile)
Long Haul (≥700 miles)	0.185	0.0104	0.0085
Medium Haul (≥300 &<700 miles)	0.229	0.0104	0.0085
Short Haul (<300 miles)	0.277	0.0104	0.0085
Distance Not Known	0.271	0.0104	0.0085

EMPLOYEE COMMUTE

Assumptions

Estimates based on 80 person crew interview

Carpool assumed to have 2 occupants

All employees commuted in single occupant car for the traditional shoot

Source: US EPA, Optional Emissions from Commuting, Business Travel and Product Transport, May 2008, Tables 2 & 3.

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EFCH4 = CH4 Emission Factor

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Green Shoot					
Transport	Employee %	# of people	Avg. Dist Traveled (Mile)	Passenger Miles Traveled	CO2e kg
Car	29%	23	4.35	100.5	37.47582855
Bike/Walk	17%	14	4.35	60.9	0
Carpool	44%	35	4.35	76.125	28.51421738
TTC	10%	8	4.35	34.8	3.72
Total:					69.71947841

Traditional Shoot*					
Transport	Employee %	# of people	Avg. Dist Traveled (Mile)	Passenger Miles Traveled	CO2e kg
Car	100%	40	186.5	7458	799.2559608
Total:					799.256

Emissions Factors for Employee Commute Travel

Travel	CO2 Emissions factor (kgCO2/Passenger-Mile)	CH4 Emissions Factor (gCH4/Passenger-mile)	N2O Emissions Factor (gN2O/Passenger-mile)
Bus	0.107	0.0006	0.0005
Car	0.364	0.031	0.032

VEHICLE EMISSIONS

Assumptions

Idling for 1 hour uses 1 gallon of gas
 SUV operate at 15 miles per gallon

Source

www.consumerenergycenter.org/myths/IDLING

Green Shoot

Vehicle Class	PMT	kg CO2e
9 Rental Vehicles	111.87	23
2 Dodge vans, 3 Hyundai SUV	99.44	8
Total kg CO2e:		95.0366
Total mt CO2e:		0.0950

Traditional Shoot*

Vehicle Class	PMT	kg CO2e
9 Rental Vehicles	149.2	55.8900
2 utility vans	372	198.7693
Russian Crane Arm SUV	525	280.5212
Process Trailor	525	280.5212
3 Hyundai SUV	559.4	298.9020

Total kg CO2e: 1114.6035
Total mt CO2e: 1.1146

Formula: $E = PMT * (EFCO2 + EFCH4 * 0.021 + EFN20 * 0.310)$

E = Total CO2 equivalent Emissions

PMT = Passenger Miles Traveled

EFCO2 = CO2 Emission Factor

EFCH4 = CH4 Emission Factor

EFN20 = N20 Emission Factor

0.021 = Conversion Factor

0.310 = Conversion Factor

Emissions Factors for Vehicle Travel

Vehicle Type	CO2 Emissions factor (kgCO2/Passenger-Mile)	CH4 Emissions Factor (gCH4/Passenger-mile)	N20 Emissions Factor (gN20/Passenger-mile)
Car	0.364	0.031	0.032
Light Duty Truck	0.519	0.036	0.047

EQUIPMENT

Assumptions

1200 amp generator consumes 10 gallons per hour
 500 amp generator consumes 5 gallons per hour
 200 amp generator consumes 2.5 gallons per hour
 Green diesel generator reduces emissions by 20% with scrubbers
 Forklift uses 2 gallons propane per day
 Scissor lift uses 2 gallons propane per day
 Zoom Boom uses 2 gallons propane per day

Source

<http://www.annapolismobilepower.com/1200.html>

Green shoot

Fuel	kg CO ₂ / gallon	Volume Consumed (gallons)	kg CO2	kg CO2
Distilate Fuel Oil No. 1	10.18175	4	40.727	72
Propane	12.6545188	16	202.4723008	202.5
Total:			274.5	274.5
Total mt CO2e:			0.1245	0.1245

Traditional Shoot*

Fuel	kg CO ₂ / gallon	Volume Consumed (gallons)	kg CO2	kg CO2
Distilate Fuel Oil No. 1	10.18175	413	4204	9268
Propane	12.6545188	60	759.271128	759.2711
Total:			10027.2711	10027.2711
Total mt CO2e:			4.5483	4.5483

WASTE

Assumptions

1 water bottle weighs .03 lbs
 Water bottle and paper consumption included in waste weight
 500 sheets to a ream
 5.5 lbs to a ream

Source

The International Bottled Water Association

Green Shoot		
	lbs	mt CO2e
Waste	100	0.004
Recycling	218.5	- 0.385
Compost	215	- 0.0215
Total mt CO2e:		- 0.4025

Traditional Shoot*		
	lbs	mt CO2e
Waste	200	0.008
Water Bottles	144	0.0022
Total mt CO2e:		0.0102

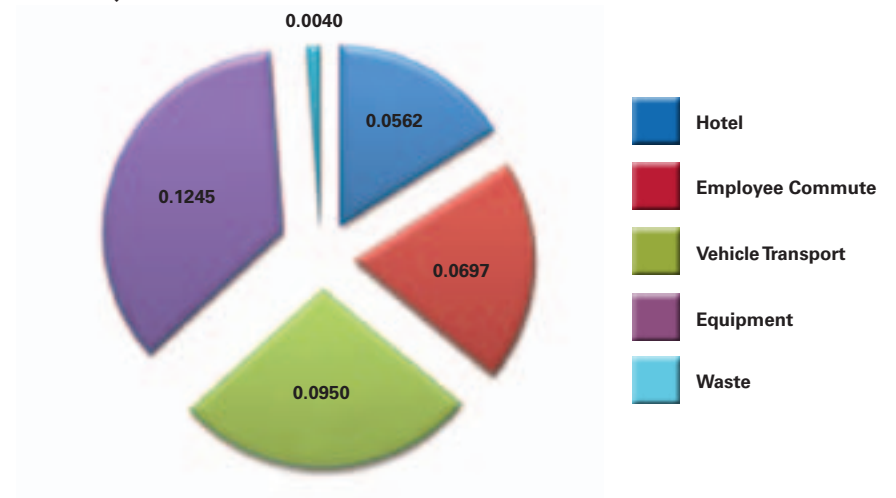
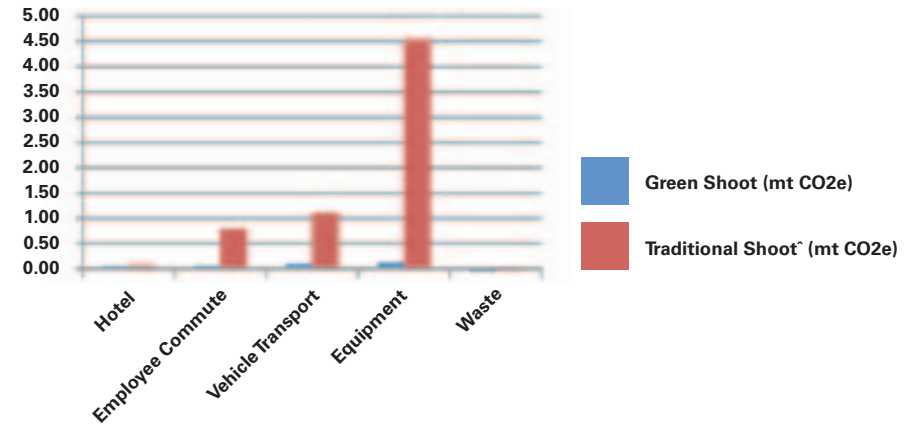
*Waste composition % based on industry averages available from the California State Government's Solid Waste Characterization Database 1999

SUMMARY

Emission Source Category	Green Shoot (mt CO2e)	Traditional Shoot* (mt CO2e)
Hotel	0.06	0.014
Employee Commute	0.07	0.78
Vehicle Transport	0.10	1.11
Equipment	0.12	4.55
Waste	0.0040	0.008
Total mt CO2e:	0.35	8.93

Additional Information*	Green Shoot (mt CO2e)	Traditional Shoot* (mt CO2e)
Recycling	- 0.39	0
Compost	- 0.02	0
Total mt CO2e:	- 0.41	0

Difference in mt CO2e:	8.58
% Reduction:	96%



*Negative emissions resulting from recycling and compost can not be subtracted from the inventory total. They only represent emissions that would have been emitted had the waste been disposed of through conventional methods.