Greenhouse Gas Emissions Inventory

Bridgeport, CT

September 2008

Regional Plan Association

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i. Executive Summary

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Energy use in buildings accounts for 65.5% of citywide emissions, followed by transportation (33.3%) and solid waste (1.2%). Nearly all (92.5%) transportation emissions are road-related.

Electricity and carbon-based fuels for vehicles (gasoline and diesel) each account for roughly 32% of citywide emissions (electricity is 32.2% and gasoline and diesel together are 32.1%). Natural gas contributes 23% and fuel oil contributes 11.3%. Of all energy sources, electricity derives the least amount of energy per tonne of CO_2e greenhouse gas emissions, at 1 tonne CO_2e/8.22 MMBtu, compared with 1 tonne CO_2e/12.86 /MMBtu from gasoline and diesel (averaged from Bridgeport energy numbers), 1 tonne CO_2e/13.34 MMBtu from fuel oil and 1 tonne CO_2e/17.84 MMBtu for natural gas.

Government facilities and operations (detailed in the municipal inventory section of this report) contribute 40,430 metric tons of CO_2e (not including emissions from employee commute) or just under 4% of citywide emissions.

Buildings are the largest source of municipal (governmental) emissions, accounting for 23,628 tonnes of CO_2e (58.6%) followed by water/sewage treatment (8,133 tonnes (20.1%)), fuel use by municipal vehicles (5,318 tonnes (13.2%)) and streetlights/traffic lights (3,296 tonnes (8.2%)).

This inventory investigates emissions resulting from the commute to and from work by Bridgeport municipal employees, though not included in the municipal total. Since the municipal government and school district together have a large number of employees (4,250), this is an area in which the City of Bridgeport can potentially create reductions through actions such as establishment of carpooling. In fact, employee commute accounts for 10,776 metric tons of CO_2e, making it the second largest source among municipal operations.

Among energy sources for municipal (governmental) operations, electricity use produces the most emissions (21,871 tonnes (54.1%)) followed by natural gas (13,242 tonnes (32.8%)). When gasoline from employee commute is considered in analysis of gasoline emissions, gasoline supersedes natural gas as the second largest source of municipal

emissions at 13,925 tonnes (27.2%). All motor vehicle fuels combined from municipal operations and commute emit 16,094 tonnes or 31.4% of all municipal emissions.

The City of Bridgeport is already taking steps to reduce its carbon footprint among municipal operations. It purchases 20% "green energy" for most public facilities and school buildings, uses less energy-intensive bulbs for street and traffic lights than it has in past years, and has added CNG and hybrid vehicles to its municipal fleet. In the community as a whole, Bridgeport has distributed eight hundred additional recycling bins within the past year, has offered educational programs to increase recycling, and has a street tree planting program. In addition, Bridgeport disposes of all municipal solid waste through controlled incineration, which is considered a carbon-neutral means of waste disposal of many types of waste by accepted inventory accounting methods.

With this inventory, Bridgeport is poised to undertake a more structured and all-encompassing sustainability initiative so as to reduce its carbon footprint in a methodical manner and simultaneously reduce energy costs for municipal operations as well as for residents citywide. The two biggest sources of emissions, electricity use and automobile fuel, must be aggressively addressed. Educational programs, site-specific energy-reduction measures, as well as planning and zoning for energy-smart development are three areas to be investigated on a citywide scale. With more than 50,000 residences in Bridgeport, even small energy savings in each residence will help create significant emission reductions. Planning for growth around the existing downtown area, with easy access to mass transportation, and with mixed uses comingled, represents another means to reduce greenhouse gas emissions on a larger scale.

Cities often have lower per capita emissions than suburban areas due to less reliance on personal automobile travel (given the availability of mass transit systems, ability to walk and/or bicycle) and due to greater built-in energy efficiencies of buildings (smaller residence size and shared internal walls of multi-family homes and larger multi-residential structures as opposed to single-family detached units which have all sides with exterior surfaces). Bridgeport has a tremendous potential to build upon its existing infrastructure in such a way as to encourage reduced greenhouse gas emissions. The city already has a strong bus transit system which connects with a rail station serving both Metro-North Commuter rail trains and Amtrak trains. The majority of automobile traffic in Bridgeport is expressway traffic. Reducing automobile-related emissions will require evaluation of expressway and interstate vehicular traffic and alternatives. This area of greenhouse gas emissions control clearly extends beyond the City of Bridgeport's jurisdiction, to the State of Connecticut.

Within the municipal sector, buildings also represent the largest emissions source, so efficiency programs, which include both reduction of use, and incorporation of more efficient equipment, are expected to make a big difference. Purchasing "green energy" is a valuable step in reducing carbon impact. An equally important step is reducing consumption. Given that many of the largest energy-consuming buildings are schools, Bridgeport has an excellent opportunity to simultaneously reduce energy use and educate an important sector of its population on the importance that individual actions play in

energy reduction. Among vehicle fleet operations, attention can be turned to replacing older vehicles, which are being retired, by fuel-efficient vehicles, and making certain all vehicles are appropriate for their use. The large amount of emissions resulting from employee commute represents another opportunity for Bridgeport to take a lead in offering alternative, less fuel-intensive means for bringing employees to and from work, or establishing other means of reducing commuter emissions, perhaps by including telecommuting options.

The next steps are to set an emissions reduction goal and establish an action plan. Many cities set emissions reduction goals, which span somewhat long time periods, say ten or fifteen years. It seems preferable to establish shorter-term goals (one or two year goals) so as to emphasize the need for immediate action, and begin to take steps as soon as possible. Small steps have larger cumulative effect, are generally easier to get off the ground, and are easier to focus upon. An additional benefit of establishing shorter-term goals is it allows for faster and more frequent review of progress being made and quickly identifies areas in which an action plan may need to be amended. Thus, an overall action plan for municipal greenhouse gas reductions is likely to include several actions which can be started immediately, and several actions which may require longer-planning and execution. Overall, this inventory represents a strong start to Bridgeport's program of greater sustainability.

I. Greenhouse Gases and Climate Change

A. Background on greenhouse gases and emissions

There is broad consensus among the scientific community that human activities, including fossil fuel burning, changes of land use, and certain industrial processes, are increasing greenhouse gases, which, in turn, is impacting climate. Since the last Ice Age (11,000 years before present) global temperature is believed to have risen by 3 degrees Celsius (5.4 degrees Fahrenheit).[1] Climate change of this nature can directly impact weather patterns, and associated precipitation, droughts and floods, plant and animal biodiversity, sea water level, and human health.

In the absence of greenhouse gases our planet would be much too cold to be habitable. In the normal course of events, some sunlight reaching the earth is absorbed as heat and some is radiated back into the atmosphere. Part of this re-radiated light passes through to the outer atmosphere, but part is absorbed by gases in the atmosphere (the greenhouse gases), which radiate the light (now in the form of infrared light (heat waves)) in many directions, including back toward earth. The absorption and re-radiation of light by greenhouse gases causes an increase in temperature in the lower atmosphere.

Water vapor is the most abundant greenhouse gas, but human activities are not known to be altering the volume of water vapor in the atmosphere to any meaningful extent. Further, two of the most abundant gases in our atmosphere - oxygen and nitrogen, are not considered greenhouse gases, because they do not significantly absorb the heat being radiated back from the earth. The greenhouse gases of greatest concern with regards to the impact from human activities are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), and, to a lesser extent by volume, perfluorocarbons (PFC's), hydrofluorocarbons (HFC's) and sulfur hexafluoride (SF_6).

Specific greenhouse gases and their sources:

Carbon Dioxide (CO_2) is the most prevalent greenhouse gas. Human sources of CO_2 are the burning of fossil fuels, such as oil, coal and natural gas for heating, cooling, electricity production, and the burning of fossil fuels for transportation
Methane (CH_4) results from the production and transport of coal, natural gas and oil; decomposition of organic waste, raising livestock
Nitrous oxide (N_2O) results from nylon manufacture, fertilizing fields, the combustion of fossil fuels, and from solid waste and wastewater treatment
Hydrofluorocarbons (HFC's) are manmade from a variety of industrial activities
Perfluorocarbons (PFC's) are manmade from a variety of industrial activities
Sulfur hexafluoride (SF_6) is used in electrical casings, coolants, fire suppressants

[1]Northeast States for Coordinated Air Use Management (NESCAUM), Connecticut Department of Environmental Protection, Connecticut Clean Energy Fund, "Connecticut Greenhouse Gas Inventory 1990-2000," August 2003; online at http://ctclimatechange.com/pdf/CC_Inventory_Report.pdf

Over the past several hundred years, since the start of the industrial revolution, human activities are believed to have significantly increased the abundance of carbon dioxide, methane, and nitrous oxide. According to the 1996 Intergovernmental Panel on Climate Change (IPCC), the international scientific panel which initiated and has continued study of greenhouse gases and climate change,

Since 1800:	atmospheric concentration of CO_2 has increased 30% atmospheric concentration of CH_4 has increased 145% atmospheric concentration of N_2O has increased 15%[1]

In absolute numbers, this translates to the following with regards to atmospheric gases:

CO_2	280 parts per million (ppm)	1000-1750 AD[2]
	300 ppm	Mid 1700's
	380 ppm	2006[3]
CH_4	700 parts per billion (ppb)	1000- 1750 AD
	1,775 ppb	2006
N_2O	270 ppb	1000 – 1750 AD
	320 ppb	2006

Greenhouse gases remain in the atmosphere for varying lengths of time, some quite long. Atmospheric residence times for greenhouse gases are estimated as follows.

CO_2	Variable[4]
CH_4	12 +/- 3 years
N_2O	120 years
HFC's	0.3 to 260 years
PFC's	3,200 – 50,000 years
SF_6	3,200 years

[1]Intergovernmental Panel on Climate Change (IPCC), Second Assessment Report, 1996, online at http://www.ipcc

[2]Historical data from IPPC, "Climate Change 2001 Synthesis Report: Summary for Policy Makers," online at http://www.ipcc.ch/pdf/climate-changes-2001/synthesis-syr/english/summary-policymakers.pdf

[3]2006 data from the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, NOAA Earth System Research Laboratory ,"The NOAA Annual Greenhouse Gas Index (AGGI) 2007 Update," online at http://www.esrl.noaa.gov/gmd/aggi/

[4]IPCC, 1996

Scientists have assigned each of the greenhouse gases a Global Warming Potential (GWP) which is a reflection of the chemical composition of each gas and its ability to break down in relation to carbon dioxide.

Global Warming Potentials over a 100 year period for several greenhouse gases are:

Carbon Dioxide (CO_2)	1
Methane (CH_4)	21 revised to 23[1]
Nitrous oxide (N_2O)	310 revised to 296
Hydrofluorocarbons (HFC's)	140-11,700 revised to 120-12,000
Perfluorocarbons (PFC's)	6,500-9,200 revised to 5,700-11,900
Sulfur hexafluoride (SF_6)	23,900 revised to 22,900
typical uncertainties	+/- 35%

The release of one pound of methane, with a GWP equal to 21 is considered to have potentially greater negative impact than one pound of carbon dioxide, given its GWP of one.

B. Greenhouse gas emissions in the United States and Connecticut

Eighty-three percent of United States greenhouse gas emissions by weight in the year 2000 were carbon dioxide, nine percent were methane, and six percent were nitrous oxide. In the same year, Connecticut greenhouse emissions were calculated to be 91% CO_2, 4% CH_4, 3.3% N_2O, and 1.7% HFC's, PFC's, and SF_6 combined. Differences between state and national breakdowns are attributed to Connecticut's having little agricultural land and fewer CH_4 sources such as coal mines and oil and gas production operations.[2]

The greatest contributor to greenhouse gas emissions in Connecticut in 2000 was the combustion of fossil fuel for energy. Within the energy sector, emissions sources were divided as follows:

Transportation	40%	Residential Energy	19%
Electricity generation	22%	Commercial energy	10%
		Industrial energy	9%

[1] First number or range of numbers are GWP established by IPCC in Second Assessment Report (1996); second number or range of numbers are revised GWP established by IPCC in Third Assessment Report (2001);see IPCC website online at http://www.ipcc.ch/ or see summary at U.S. EPA Energy Information Administration, online at http://www.eia.doe.gov/oiaf/1605/archive/gg03rpt/summary/special_topics.html; The EPA continues to use 1996 (Second Assessment Report) numbers to allow for comparisons over time.

[2] NESCAUM, CT DEP, CT Clean Energy Fund, "Connecticut Greenhouse Gas Inventory 1990-2000," August 2003, online at http://ctclimatechange.com/pdf/CC_Inventory_Report.pdf

C. Effects of global warming

Connecticut as a whole, and Bridgeport as a port city, stand to be significantly impacted by increased greenhouse gas emissions, and related climate change. Along with higher temperatures, Bridgeport could experience a loss of wetlands and damage to infrastructure as a result of sea level rise, increased storm surges and increased flooding. In addition, health problems would be expected to increase as a result of the heat-related spread of vector-born diseases and higher levels of certain atmospheric gases; in particular, ozone.[1]

Warming ocean currents and polar ice melting are believed to be major factors behind rising sea levels being experienced worldwide. Sea level at Bridgeport is currently rising by 0.1 inch/year, compared to 0.08 inch/year in New London. Each of these rates is greater than the global mean trend. Modeling predicts the following sea level heights above current sea level:

5.1 to 8.3 inches	by 2020
8.1 to 16.7 inches	by 2050
11.2 to 35.3 inches	by 2080

Combined with the expectation of higher sea levels, is the expectation of greater storm surges and greater coastal flooding. For a low-lying city, this combination poses a credible threat with potentially damaging impact.

According to the New England Regional Assessment, the mean annual temperature increase in Connecticut (increasing 1.7°F every 100 years, and in some areas nearly double that, at 3.5°F per 100 years) is greater than the increase in the rest of New England. State temperatures are predicted to rise 2.5°F by 2030 and 4-9° by 2100. With a 4° increase, Hartford's climate would be more like Philadelphia's; with a 9° increase, it would be more like Raleigh, N.C.'s climate. Higher summer temperatures would be expected to result in higher heat-related illnesses and deaths, along with the greater spread of insect-born diseases, such as West Nile virus and Lyme disease.

Increased water temperatures in Long Island Sound are expected to negatively impact fish and shellfish populations, and their related harvest industries. Loss of wetlands from rising sea level would be expected to additionally impact aquatic populations.

Connecticut's asthma rate, with more than 200,000 adults and 75,000 children affected across the state, surpasses the United States average, and in 1998, asthma treatment cost the state's residents approximately $134 million. A uniform increase in temperature of 7°F would be expected to increase ozone smog concentrations by nearly 20%, and carry increased health and financial burdens. Ozone is a byproduct of vehicular fossil fuel combustion. Reducing greenhouse gases through reduced vehicular emissions would reduce ozone concentrations.

[1] Gornitz, Vivien, et al., Environmental Defense Fund, "Bracing for Climate Change in the Constitution State: What Connecticut Could Face," 2004, online at http://www.edf.org/documents/3504_ct-climate_09_view.pdf

II. Climate Change Action

A. International action

In 1988 The United Nations Environment Programme and World Meteorological Association created the International Panel on Climate Change (IPCC) to conduct studies on global warming. The Kyoto Protocol, negotiated in Kyoto, Japan, in December 1997, and initially opened for signature between March 16, 1998 and March 15, 1999, is an amendment to the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty on global warming. Under the Kyoto Protocol, participating industrial countries agreed to reduce their collective emissions of six greenhouse gases (carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFC's and PFC's) by 5.2% compared to emissions in the year 1990. The agreement came into effect on February 16, 2005. As of October 2006, 166 countries had ratified the agreement. Thirty industrialized countries had committed to cutting their greenhouse gas emissions by approximately five percent below 1990 levels.[1] The United States is not a participating country.

B. Regional and state action

In the absence of national commitment to the Kyoto Protocol, numerous regional, state and local initiatives to reduce greenhouse gases have developed. Three of these may indirectly help Bridgeport to reduce its emissions. The first is the Regional Greenhouse Gas Initiative (RGGI), a multi-state effort developed by Northeastern Governors (and expanded to include Atlantic States), aimed at creating a program to control CO_2 emissions resulting from the generation and use of electricity. RGGI is working to develop a system of trading CO_2 permits among power plants in different states.[2] Connecticut is a RGGI participant. The second regional level action was the joining of New England governors and Eastern Canadian premiers in August of 2001 in issuing a Climate Change Action Plan, which calls for the reduction of greenhouse gases to at least 10% below 1990 levels by 2020.[3] Finally, on the state level, Connecticut established a Climate Change Action Plan in 2005, under the direction of The Governor's Steering Committee on Climate Change. The plan outlines fifty-five recommended actions for reducing greenhouse emissions in Connecticut.[4] If actions are taken as recommended, emissions in Bridgeport could be reduced.

[1] Williams, Carissa, and the Regional Environmental Council of Worcester, "City of Worcester, Massachusetts, Climate Action Plan, December 2006"; online at http://www.ci.worcester.ma.us/reports/ClimateActionPlan.pdf

[2] Regional Greenhouse Gas Initiative, An Initiative of the Northeast and Atlantic States of the U.S., online at http://www.rggi.org/about.htm

[3] The Committee on the Environment and the Northeast International Committee on Energy of the Conference of New England Governors and Eastern Canadian Premiers, "New England Governors/Eastern Canadian Premiers Climate Change Action Plan," 2001, online at http://www.negc.org/documents/NEG-ECP%20CCAP.PDF

[4] http://www.ctclimatechange.com/documents/ExecutiveSummary_CCCAP_2005_001.pdf

C. Local action

Local action to reduce greenhouse emissions has been widespread and is increasing. At the 73rd Annual Meeting of the United States Conference of Mayors in Chicago on June 10-14, 2005, mayors from across the United States created the Mayor's Climate Protection Agreement as a means for taking local action in reducing greenhouse gas emissions. As of August 11, 2008, 850 mayors from fifty states, Washington D.C., and Puerto Rico, representing a total population of nearly eighty million, had signed this agreement.[1] Bridgeport has signed as a participating city.

Among other things, provisions of the Mayor's Climate Protection Agreement call for participants to:

1. Meet or beat the Kyoto Protocol targets in their own communities
2. Urge their state governments and federal government to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the United States by the Kyoto Protocol, namely 7% reduction from 1990 levels by 2012, and
3. Urge the U.S. Congress to pass the bipartisan Climate Stewardship Act, which would create a national emissions trading system.[2]

A second umbrella program for local initiatives, The Urban Environmental Accords, is a nonbinding accords list of twenty-one specific actions that can make cities "more green." Mayors from around the world, who participated in United Nations World Environment Day, hosted by the City of San Francisco, were invited to sign this international treaty, which provides for certain achievement recognitions based on the number of specific actions completed in the seven years from 2005 to 2012.[3] Bridgeport was not a party to this accords signing, but could certainly undertake actions made a part of the accords.

D. ICLEI-Local Governments for Sustainability
(Formerly International Cities for Local Environmental Initiatives)

ICLEI's Cities for Climate Protection Campaign (CCP Campaign)

Whether or not a signatory participant in these local accords, hundreds of cities worldwide are establishing plans and taking concrete steps to reduce greenhouse gas emissions. Many have completed greenhouse gas inventories to assist in directing their actions. ICLEI-Local Governments for Sustainability (formerly International Cities for Local Environmental Initiatives (ICLEI)) has been a major proponent of the inventorying movement. This Bridgeport inventory has been conducted under ICLEI's Cities for Climate Protection Campaign, of which Bridgeport is now a member.

[1] Mayors Climate Protection Center; map and list of participants online at http://usmayors.org/climateprotection/map.asp

[2] U.S. Conference of Mayors, "2005 Adopted Resolutions; Environment; Endorsing the U.S. Mayors Climate Protection Agreement," http://www.usmayors.org/resolutions/73rd_conference/en_01.asp

[3] Text of the accords is online at sfenvironment.org/downloads/library/durbanenvironmentalaccords.doc

ICLEI was established with support of the United Nations Environment Programme and International Union of Local Authorities in 1990.[1] ICLEI has been granted official status to represent local governments at UN meetings. In 1992 the United Nations Framework Convention on Climate Change (UNFCCC) was formed at the Rio Earth Summit. In 1993 ICLEI and United Nations hosted the first Local Government Summit on Climate Change and Urban Environment and ICLEI launched an international program called Cities for Climate Protection (CCP).[2]

The CCP Campaign promotes local initiative to reduce greenhouse emissions, and establishes the following five milestones for doing so:

1. Conduct a baseline inventory and emissions forecast
2. Set an emissions reduction goal
3. Develop a local action plan
4. Implement emission reduction measures and policies
5. Monitor and verify results.

In 1995, ICLEI launched CCP in the United States and opened a United States office. Fewer than twenty cities were participating in CCP at the time. In 1997, there were forty-five to fifty CCP participants, and The Kyoto Protocol was signed, detailing specific national emissions reduction targets and timelines for countries that were parties to UNFCCC. [3]

E. Impact of local initiatives

The impact of local urban initiatives must not be underestimated. By 2005, when the Kyoto Protocol entered into effect, ICLEI had 159 United States CCP participants (including 11 in Connecticut). U.S. participants at that time were deemed to be collectively saving in excess of 23 million tons of GHG emissions annually.[4] This equates to roughly half of Connecticut's annual greenhouse gas emissions in the year 2000.[5]

In its 2006 International Progress Report, ICLEI noted the world population of 6 Billion people included an urban population of 2.8 Billion, equal to 47% of the total. Its 546 CCP members in 2006 represented 8% of the world's urban population, and emitted 1.85 billion tons of CO_2E or 20% of the world's urban emissions. It is believed GHG emissions reductions by these CCP members could result in substantial emissions savings.

[1] For more information on ICLEI, see online at http://www.iclei.org/
[2] ICLEI 2005 Progress Report, see online at http://www.iclei.org/documents/USA/ICLEI_US_PR_vf2.pdf
[3] ICLEI 2005 Progress Report, see online at http://www.iclei.org/documents/USA/ICLEI_US_PR_vf2.pdf
[4] ICLEI, "International Progress Report, Cities for Climate Protection, 2006,"online at http://www.iclei.org/documents/USA/documents/CCP/ICLEI-CCP_International_Report-2006.pdf
[5] http://www.ctclimatechange.com/documents/ExecutiveSummary_CCCAP_2005_001.pdf

F. Bridgeport's greenhouse gas emissions inventory

In 2008, the City of Bridgeport, under the direction of Mayor Bill Finch, joined hundreds of other cities worldwide as a member of ICLEI's Cities for Climate Protection Campaign. Mayor Finch participated in the Mayors' Institute on Climate Change in September of 2008 to discuss innovative solutions to local climate mitigation and adaptation with peers from across the tri-state region and professionals from across the nation. This program was funded by the Rockefeller Brothers Fund and managed by Regional Plan Association (RPA) with support from ICLEI. The following greenhouse gas emissions inventory was conducted by RPA for the City of Bridgeport in preparation for the Mayors' Institute.

This inventory is the first step towards Bridgeport's developing a comprehensive greenhouse gas emissions policy and comprehensive plan for sustainability. Several actions have already been taken on isolated bases to reduce emissions within the city. These include:

- -Purchase of 20% renewable energy for municipal electricity needs
- -Development of educational programs to boost citywide recycling efforts
- -Changes to more energy-efficient light bulbs in city street lights
- -Incineration of solid waste
- -Introduction of several hybrid or CNG-powered vehicles into the municipal fleet of cars
- -Tree planting along city streets

Each of these steps is important. The goal of this inventory is to provide specific information on the volume of greenhouse gas emissions created by various citywide sources, as well as sources within municipal government operations, so that the City of Bridgeport can develop a comprehensive plan, with identifiable actions, for reducing emissions.

III. Community report

i. Executive summary for citywide emissions

Bridgeport's citywide greenhouse gas emissions for 2007 are 1,019,544 metric tons (tonnes) CO_2e.

With a population of 141,627, per capita emissions are 7.92 tonnes, which is low in comparison with many cities. Cities often have lower per capita emissions than suburban areas due to less reliance on personal automobile travel (given the availability of mass transit systems, ability to walk and/or bicycle) and due to greater built-in energy efficiencies of buildings (smaller residence size and shared internal walls of multi-family homes and larger multi-residential structures as opposed to single-family detached units which have all sides with exterior surfaces). Economics likely play a part in reducing energy demand as well. In addition, incineration of municipal solid waste is considered by standard emissions accounting procedure to result in no net release of CO_2e from biogenic solid waste, so by incinerating waste, Bridgeport reduces its total greenhouse gas emissions. As noted in presentation of methodology, it is believed that pro-rating state fuel and energy data to Bridgeport, based on percent of state population, may report greater than actual fuel/energy use and associated emissions, so citywide emissions may be even lower than are reported by this inventory.

Energy use in buildings accounts for 65.5% of emissions, followed by transportation (33.3%) and solid waste (1.2%). When buildings are divided into residential, commercial and industrial sectors, transportation becomes the largest single source of emissions, followed closely by residential buildings (29.3%) and commercial buildings (27.6%), while industrial buildings contribute only 8.6% of citywide emissions. Nearly all (92.5%) transportation emissions are road-related.

Electricity and fossil fuels for vehicles (gasoline and diesel) each account for roughly 32% of citywide emissions (electricity is 32.2% and gasoline and diesel together are 32.1%). Natural gas contributes 23% and fuel oil contributes 11.3%. Of all energy sources, electricity derives the least amount of energy per metric ton of CO_2e greenhouse gas emissions, at 1 tonne CO_2e/8.22 MMBtu, compared with 1 tonne CO_2e/12.86 MMBtu from gasoline and diesel (averaged from Bridgeport energy numbers), 1 tonne CO_2e/13.34 MMBtu from fuel oil and 1 tonne CO_2e/17.84 MMBtu for natural gas.

Government facilities and operations (detailed in the municipal inventory section of this report) contribute 40,430 metric tons of CO_2e (not including emissions from employee commute) or just under 4% of citywide emissions.

A. Community report-residential

Bridgeport's residential sector creates 298,809 metric tons of CO_2e, which is 29.3% of citywide emissions. The residential sector is the largest source of emissions among the three building sectors, but is only slightly larger than the commercial building sector, which emits 281,327 metric tons of CO_2e. It is possible that some large residential units are considered commercial accounts by gas and electric utilities. Electricity accounts for nearly half of residential energy use (137,169 tonnes or 13.5% of Bridgeport's total emissions). Natural gas use creates 100,250 tonnes of CO_2e (9.8% of total city) and light fuel oil creates 61,389 tonnes of CO_2e (9.8% of citywide emissions).

B. Community report-commercial

Commercial buildings create 281,327 metric tons of CO_2e, which is 27.6% of citywide emissions. The breakdown among energy sources is as follows: electricity (150,933 tonnes (14.8% of citywide total)); natural gas (83,153 tonnes (8.2% of citywide emissions)); and light fuel oil (47,241 tonnes (4.6% of citywide emissions)).

C. Community report-industrial

Emissions from Bridgeport's industrial sector equal 28,409 metrictons of CO_2e, which is significantly smaller than emissions from residential or commercial sectors. Industrial CO_2e emissions represent 8.6% of citywide emissions. Unlike the residential and commercial sectors, natural gas is the biggest emissions source, accounting for more than half of industrial emissions (52,694 tonnes of CO_2e or 5.2% of total citywide emissions). Industrial electricity use results in 28,409 tonnes of CO_2e (2.8% of city emissions) and light fuel oil use creates 6,220 tonnes of CO_2e, which is 0.6% of citywide emissions).

D. Community report-transportation

Transportation generates one third (33.3%) of citywide emissions, which is equivalent to 339,386 metric tons of CO_2e. All three building sectors combined create more greenhouse gases, but transportation is the single largest emitter when buildings are evaluated on a subsector (residential-commercial-industrial) basis. Road transportation accounts for 92.5% of all transportation emissions and 30.8% of total citywide emissions, while railroad (Metro-North and Amtak) accounts for 1.1% of citywide emissions (11,305 tonnes of CO_2e) and marine transportation accounts for 1.4% of citywide emissions (4,121 tonnes of CO_2e). As noted in discussion of methodology, marine emissions likely do not occur in Bridgeport or Bridgeport waters, but are attributed to Bridgeport's emissions inventory because fuel responsible for the emissions is loaded into vessels in Bridgeport.

E. Community report-solid waste

Municipal solid waste results in 12,698 metric tons of CO_2e, which is 1.2% of citywide emissions. 3,001 metric tons of the total solid waste emissions are biogenic (paper, food, plant, wood) and are believed to create no net emissions when they are incinerated, because they would decay and create the same greenhouse gas emissions if allowed to decompose naturally. Incineration at the Wheelabrator facility creates electricity used to power the facility's operations, and electricity, which feeds into the local energy grid. Wheelabrator reports that on a life cycle basis, every ton of trash incinerated results in the

net avoidance of emissions of 1 ton of CO_2e because solid waste replaces oil or coal as a fuel source.

F. Community – other

It is noted that Bridgeport has one closed landfill, but emissions from the site are not quantified. The Seaside Landfill is one hundred percent capped, but may exhibit some methane seepage through the soil cap. The quantity and characterization of solid waste at the Seaside Landfill are unknown.

IV. Municipal report

i. Executive summary

Bridgeport municipal operations produce 40,430 metric tons (tonnes) of CO_2e.

Buildings are the largest source of municipal emissions, accounting for 23,684 tonnes of CO_2e (58.6%) followed by water/sewage treatment (8,133 tonnes (20.1%)), fuel use by municipal vehicles (5,318 tonnes (13.2%)) and streetlights/traffic lights (3,296 tonnes (8.2%)).

This inventory investigates emissions resulting from the commute to and from work by Bridgeport municipal employees, since there is a large number of employees (4,250) and since this is an area in which the City of Bridgeport can potentially create reductions through actions such as establishment of carpooling. In fact, employee commute accounts for 10,776 tonnes of CO_2e, making it the second largest source among municipal operations.

Among energy sources, electricity use produces the most emissions (21,871 tonnes (54.1%) followed by natural gas at 13,242 tonnes (32.8%). When gasoline from employee commute is considered in analysis of gasoline emissions, gasoline supersedes natural gas as the second largest source of emissions at 13,924 tonnes (27.2%). All motor vehicle fuels combined from municipal operations and commute emit 16,093 tonnes or 31.4% of all emissions.

Comparison of emissions in inventory year 2007 with those in 2005 indicates electricity use in municipal buildings has decreased by 2,390.5 metric tons, and electricity use for traffic lights and streetlights has decreased by 219.7 metric tons. Municipal fleet operations show a large increase of 1,687.7 metric tons and water and sewage treatment operations emit 400 more metric tons of CO_2e in 2007 than in 2005.

The City of Bridgeport has already taken steps to reduce its municipal carbon footprint, including purchase of 20% “green energy” for most public facilities and school buildings, use of less energy-intensive bulbs for street and traffic lights, addition of CNG and hybrid vehicles within the municipal fleet, educational programs to increase recycling. In addition, Bridgeport disposes of all municipal solid waste through controlled incineration, which is considered a carbon-neutral means of waste disposal for many types of waste by accepted inventory accounting methods.

A. Municipal summary

Bridgeport municipal operations produce greenhouse gas emissions of 40,430 metric tons of CO_2e (excluding emissions from employee commuting) and 51,206 metric tons of CO_2e with employee commute. Many cities do not include greenhouse gas emissions from employee commute in their inventories, but employee commute is found to create 10,776 metric tons of CO_2e or 21% of Bridgeport's municipal greenhouse gas emissions, and is the second largest source of municipal emissions.

Buildings are by far the single largest source of emissions, accounting for 23,684 metric tons of CO_2e (58.6% of total without commute and 46.3% with commute). Emissions from buildings are split nearly equally between electricity (11,585 tonnes of CO_2e) and natural gas (12,099 tonnes of CO_2e). Water and sewage treatment, which contributes 8,133 tonnes of CO_2e is the second largest emitter of greenhouse gases among municipal sectors when employee commute is not factored in (accounting for 20.1% of total emissions) but is the third largest source (at 15.9%) when commute numbers are included.

The following summarizes municipal greenhouse gas emissions for 2007:

Sector	**CO_2e (tonnes)**	**% Excluding commute**	**% Including commute**
Buildings	23,684	58.6	46.3
Vehicle Fleet	5,318	13.2	10.4
Streetlights	3,296	8.2	6.4
Water/sewage	8,133	20.1	15.9
Employee commute	10,776	----	21.0
Total without commute	40,430		
Total with commute	51,206		

This report has been generated for Bridgeport, CT using STAPPA/ALAPCO and ICLEI's Clean Air and Climate Protection Software developed by Torrie Smith Associates Inc.

Many cities include solid waste in their municipal inventories. This inventory does not include municipal solid waste. As a result, some of the percentages associated with each of Bridgeport's reported sectors may be a bit higher than equivalent tons emitted by other cities.

B. Source summary

Electricity is the single largest source of greenhouse gas emissions of all energy sources, accounting for 21,871 tonnes of CO_2e (54.1% of municipal emissions excluding employee commute and 42.7% if employee commute is included). Natural gas is second largest, if employee commute is excluded, accounting for 13,242 tonnes of CO_2e (32.8% without commute and 25.9 % with commute). When employee commute emissions are considered in gasoline analysis, gasoline becomes the second largest source of greenhouse gas emissions, resulting in 13,924 tonnes of CO_2e (27.2%) as compared with 3,148 tonnes of CO_2e (7.8%) if commute is not included. When all vehicle fuels (gasoline, diesel, ethanol and CNG) are considered in aggregate, vehicle fuel accounts for 5,317 tonnes of CO_2e (13.1%) without commuter miles included, and jumps to 16,093 tonnes of CO_2e, or 31.4% of total municipal greenhouse gas emissions if fuel for commuter miles is included in the aggregate (although some fuel attributed to vehicle fleet may be used to power employee commute for "take-home" vehicles).

In terms of CO_2e emissions relative to energy produced and used, electricity is by far the least efficient of the energy sources. While electricity accounts for 42.7% of CO_2e its energy amounts to 179,803 MMBtu. This compares with 27.2% emissions from gasoline, which has a nearly similar 179,621 MMBtu associated with it (when employee commute is included) and compares with 25.9% of municipal emissions resulting from 236,270 MMBtu from natural gas (nearly one and a third times the energy).

C. Sector summary - municipal buildings

Municipal buildings are the biggest source of greenhouse gas emissions among municipal facilities and operations. Buildings account for 23,684 metric tons of CO_2e (58.6% of total without commute and 46.3% with commute). Emissions from buildings are split nearly equally between electricity (11,585 tonnes of CO_2e) and natural gas (12,099 tonnes of CO_2e).

The greatest emissions come from the following facilities:

Building	**CO_2e (tonnes) Including**	**% Excluding commute**	**% commute**
Central High School	1,558	3.9	3.0
City Hall Annex	1,368	3.4	2.7
Harding High School	1,268	3.1	2.5
City Hall	1,190	2.9	2.3
JFK Campus	995	2.5	1.9
Bassick	986	2.4	1.9
Blackham	740	1.8	1.4
Batalla	678	1.7	1.3
Marin	603	1.5	1.2

WPCA facilities are not included in the buildings sector. All energy for WPCA operations is included in the Water and Sewage section of this inventory. It is possible to make partial comparison between WPCA building emissions and those of other municipal facilities. Natural gas used by WPCA is used strictly to heat buildings, and not to run water treatment operations. Natural gas used by WPCA creates 1,143 tonnes of CO_2e emissions, which is 2.9% of municipal emissions (not including employee commute) or 2.2% if employee commute is included. Electricity is used for both lighting and running equipment. No breakdown between lighting use and equipment operations use is considered, making it impossible to consider building electricity as a single component for comparison.

Building emissions are the largest source of municipal greenhouse gas emissions and electricity accounts for roughly half of total building emissions. While it is not reflected in this inventory, due to methodology requirements established by ICLEI, the City of Bridgeport has taken steps to reduce its carbon footprint and reduce greenhouse gas emissions. Up until November 2007, Bridgeport purchased electricity solely through United Illuminating Company. In December 2007 the City of Bridgeport entered into a contract to purchase 4,200 MWh, an amount deemed to be the equivalent of 20% of its electricity (this does not include WPCA electricity use), as "green power," from Constellation NewEnergy. Also in December 2007, the Bridgeport Board of Education entered into a contract to purchase 4,700 MWh, an amount deemed to be the equivalent of 20% of its electricity, as "green power" from Constellation NewEnergy. Under both contracts the City of Bridgeport purchased "NewMix Super (Green-e-Any), which is composed of electricity generated from the following sources within the United States:

Constellation NewMix Super (Green-e-Any)

20%	Green E certified Renewables, including biomass, geothermal, small, wind, solar, or low impact hydroelectric
2%	Other renewables
8%	Large hydroelectric
42%	Coal
6%	Natural Gas
2%	Oil
21%	Other
100%	Total

Purchase of the NewMix Super (Green-e-Any) represents a commitment by The City of Bridgeport to support and promote clean energy development and use. Purchase of renewable energy does not necessarily mean the actual electricity *delivered* to Bridgeport municipal facilities is generated by renewable resources. Bridgeport cannot, under the existing electricity supply structure, change what electricity actually comes to its buildings. Electricity delivered to Bridgeport municipal facilities comes from the local operating grid, and the city is, therefore, producing emissions related to source fuels.

However, other customers, somewhere in the United States, are using electricity, which has been generated from renewable sources, developed and supported, in part, by Bridgeport's purchase of this Constellation NewMix.

D. Sector summary - municipal fleet

Greenhouse gas emissions from operation of municipal vehicles and lawn/maintenance equipment amounts to 5,318 tonnes of CO_2e, which is 13.2% of all municipal emissions if employee commute is not included and 10.4% of all municipal emissions if employee commute is included.

Board of Education and Special Education combined accounted for the most greenhouse gas emissions from this sector, with 911 tonnes of CO_2e. The other biggest contributors are the Police Department (864 tonnes of CO_2e), Public Works and Roadway (594 tonnes of CO_2e), Parks (674 tonnes of CO_2e), Sanitation and Recycling (644 tonnes of CO_2e), and WPCA (652 tonnes of CO_2e), which is not surprising as each of these departments has vehicles on the road all day, or nearly all day.

The biggest sources of greenhouse gas emissions in the municipal fleet sector are:

Department	**CO_2e (tonnes)**	**% Excluding commute**	**% Including commute**
Board of Education	477	1.2	0.9
Special Education	434	1.1	0.8
BOE + Special Education	**911**	**2.3**	**1.7**
Police	**864**	**2.1**	**1.7**
Roadway	569	1.4	1.1
Public Works Adm.	30	0.1	0.1
Public Works Maint.	95	0.2	0.2
Pub. Works Adm. + Maint	**125**	**0.3**	**0.3**
Roadway + Pub. Works	**594**	**1.7**	**1.4**
Parks vehicles	100	0.2	0.2
Parks lawn/maint. eqip	416	1.0	0.8
Parks golf equip/maint.	158	0.3	0.3
Parks total	**674**	**1.7**	**1.3**
WPCA	**652**	**1.6**	**1.3**
Sanitation	531	1.0	1.3
Recycling	113	0.3	0.2
Sanitation + Recycling	**644**	**1.6**	**1.2**
Fire Department	**464**	**1.1**	**0.9**

It is possible that the Parks Department emits a greater amount of emissions than is calculated by this inventory. The reason for this is that the department operates a number of pieces of equipment, which are powered by two-cycle engines. No input is made for oil (and subsequently no emissions are calculated from the burning of oil) that is a required part of the fuel mix for such engines.

E. Sector summary - municipal street lights

Bridgeport has approximately 1,300 Black Decorator (Deco) street lights and 11,300 other street lights. In addition, Bridgeport pays operating costs for 174 Traffic lights, which are owned by the State of Connecticut.

Streetlights and traffic lights together produce 3,296 metric tons of CO_2e, which is 8.2% of municipal emissions (excluding commuter miles) or 6.4% of municipal emissions if commuter miles are included in the inventory.

The breakdown of streetlights is as follows:

	CO_2e (tonnes)	**% Excluding commute**	**% Including commute**
Streetlights	3,120	7.7%	6.1
Traffic lights	176	0.4	0.3

F. Sector summary - municipal water and sewage

Treatment of water and sewage in Bridgeport produces 8,133 metric tons of CO_2e, which is 20.1% of municipal emissions, excluding employee commute, and 15.9% emissions if employee commute miles are included. Natural gas is used to heat WPCA facilities. Electricity is used for lighting and running equipment. The majority of emissions results from electricity consumption.

	CO_2e (tonnes)	**% Excluding commute**	**% Including commute**
WPCA electricity	6,990	17.3	13.6
WPCA natural gas	1,143	2.8	2.2
WPCA total	**8,133**	**20.1**	**15.9**

Fugitive emissions from waste water treatment

ICLEI government GHG emissions accounting protocol recommends determination of fugitive emissions resulting from wastewater treatment. Bridgeport processes wastewater through a centralized system with nitrification/denitrification. Treating wastewater in this

manner releases fugitive N2O emissions. Emissions depend, in part, on population. The population served by the Bridgeport facilities is 157,250. No significant industrial sources of nitrogen are included.

The City's fugitive N_20 emissions related to waste water treatment equals 1.1 metric tons of N_2O, derived as follows:

Annual N2O emissions (metric tons) = Ptotal x EF nit/denit x 10^{-6}

where:

Term	**Description**	**Value**
Ptotal	= total population that is served by the centralized WWTP adjusted for industrial discharge, if applicable [person]	user input
EF nit/denit	= emission factor for a WWTP with nitrification/denitrification [g N2O/person/year]	7
10^{-6}	= conversion from g to metric ton [metric ton/g]	10^{-6}

Bridgeport fugitive N_20 emissions related to waste water treatment =
$(157,250)(7)(10^{-6}) = (1,100,750)(10^{-6}) = 1.1$ metric tons N_2O
Source: EPA *Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006*, Chapter 8, 8-14 (2008).

G. Sector summary - municipal solid waste

No inputs are made to this sector. The lack of solid waste inputs will make percentages of other sectors larger in comparison with those of other cities which include municipal solid waste in inventories.

H. Sector summary -employee commute

Emissions resulting from commutes to and from work by City employees are an optional part of the municipal inventory. Many cities do not include this analysis. The City of Bridgeport has 4,250 employees, and employee commute is deemed a relevant area of investigation. The mileage put into the greenhouse gas emissions software is deemed the maximum possible given home zip codes of employees (See Tables 49 and 50.)

At nearly twenty million miles travelled a year (19,477,659 miles used for inventory) employee commute is the second largest source of municipal greenhouse gas emissions.

Employee commute 10,776 metric tons CO_2e 21% of total municipal emissions

I. Time series report – municipal inventory

2007 is designated the base year for analysis due to the availability of information across all sectors. Information from some sectors is available for 2005. The following shows changes in greenhouse gas emissions between 2005 and the 2007 inventory year in sectors for which comparisons may be made. Discussion follows with regards to changes.

Government Greenhouse Gas Emissions Time Series Report

	2005	2007
Buildings-electricity		
eCO_2 (tonnes)	13,975.5	11,585
Energy (MMBtu)	114,896.1	95,239
Cost ($)	no data	5,721,079
Vehicle Fleet		
eCO_2 (tonnes)	4,200.9[1]	5,317.6
Energy (MMBtu)	46,929.8[1]	68,148.0
Cost ($)	no data	1,560,089
Streetlights		
eCO_2 (tonnes)	3,516.0	3,296.3
Energy (MMBtu)	28,905.9	27,099.8
Cost ($)	no data	2,693,733
Water/Sewage		
eCO_2 (tonnes)	7,733.0	8,133.0
Energy (MMBtu)	73,604.6	77,862.7
Cost ($)	1,856,575.0	2,867,054
Total for included sectors		
eCO_2 (tonnes)	29,428.4	28,331.9
Energy (MMBtu)	264,336.4	268,349.5
Cost ($)	not comparable	12,841,955

Buildings-natural gas – no data available for 2005; Employee commute – no data available for 2005. Neither of these is included in above time series comparison.

[1] Fuel for Parks Department lawn/equipment and fuel for Parks Department lawn/equipment used at Fairchild Wheeler Golf Course are not available for 2005. This number is adjusted upwards to include 2007 figure of 574 tonnes of CO2e and 7,356 MMBtu energy from Parks lawn/equipment, so that a comparison may be made.

This report has been generated for Bridgeport, CT using STAPPA/ALAPCO and ICLEI's Clean Air and Climate Protection Software developed by Torrie Smith Associates Inc.

a. Time series reports – municipal buildings
A direct comparison between 2005 and 2007 total-building-emissions cannot be made because data are not provided for natural gas use in buildings in 2005. Figures for electricity use are available, and show a decrease in electricity use and a corresponding reduction in greenhouse gas emissions of 2,390.5 tonnes of CO_2e from 2005 to 2007 This may be a partial result of conservation and efficiency measures.

b. Time series reports – municipal vehicle fleet
Two inputs are missing from the 2005 analysis, which are included in 2007, but have been adjusted for (and noted) in the 2005 time series figure. These inputs are fuel for Parks Department lawn/equipment and fuel for Parks Department lawn/equipment used at Fairchild Wheeler Golf Course. If 2007 emissions values for these two items are added to 2005 figures (574 tonnes Parks combined) the total for 2005 is 4,200.9 tonnes, which is still 1,116.7 tonnes less than 2007 emissions, indicating a large increase over the two-year time period.

c. Time series reports – municipal streetlights
Overall, streetlight and traffic light emissions decrease by 219.7 tonnes from 2005 to 2007.

Street light changes Over the past nine years, many street light bulbs have been changed out to reduce electricity use. The City has not reduced the wattage of any bulbs, which are located within fifty feet of intersections. While such lights account for approximately 20% of the street lights, the higher wattage bulbs are being used to ensure proper lighting for safety reasons. Records are not available for specific street light bulb changes. In fact, since FY 04 there has been a significant reduction in electricity usage for street lights from 10,442,604 kWh to 7,526,574 kWh as shown in Tables 43-45.

With electricity for street light use in FY 06 (input into 2005 inventory) at 8,003,090 kWh, associated emissions are 3,322 tonnes CO_2e, which are 202 tonnes more than those emitted in 2007.

Traffic light changes Light bulbs in Bridgeport traffic lights have been changed out over the past ten years to increase energy efficiency. Seventeen traffic lights are being changed out in 2008 and fourteen more are scheduled to be changed out in 2009. Electricity consumption decreases from 466,346 kWh to 423,676 kWh between 2005 and 2007, and greenhouse gas emissions decrease from 194 tonnes CO_2e to 176 tonnes, representing an annual savings of 18 tonnes.

d. Time series reports – municipal water and sewage
Water and sewage treatment operations result in the emission of 400 more tonnes of CO_2e in 2007 than in 2005. Although certain equipment operated by natural gas came online between 2005 and 2007, data put into the software represent full energy supplies for both years and a direct comparison may be made between the two.

V. Opportunities and responsibilities

With his inventory, Bridgeport is poised to undertake a more structured and all-encompassing sustainability initiative so as to reduce its carbon footprint in a methodical manner and simultaneously reduce energy costs for municipal operations as well as for residents citywide.

The City of Bridgeport is already taking steps to reduce its carbon footprint among municipal operations. It purchases 20% “green energy” for most public facilities and school buildings, uses less energy-intensive bulbs for street and traffic lights than it has in past years, and has added CNG and hybrid vehicles to its municipal fleet. In the community as a whole, Bridgeport has distributed eight hundred additional recycling bins within the past year, and has offered scattered educational programs to increase recycling. In addition, Bridgeport disposes of all municipal solid waste through controlled incineration, which is considered a carbon-neutral means of waste disposal of certain types of waste by accepted inventory accounting methods.

Moving forward, Bridgeport has a tremendous opportunity to become a model green city. Such an effort can begin within the municipal sector and expand to the community as a whole. Within municipal operations, Bridgeport now has a base from which greenhouse gas reductions may be measured. Since buildings represent the largest emissions source, efficiency programs, which include both reduction of use, and incorporation of more efficient equipment, would be expected to make a big difference. Purchasing “green energy” is a valuable step in reducing carbon impact. An equally important step is reducing consumption. Given that many of the largest energy-consuming buildings are schools, Bridgeport has an excellent opportunity to simultaneously reduce energy use and educate an important sector of its population on the importance that individual actions play on energy reduction. Among vehicle fleet, attention can be turned to replacing older vehicles, which are being retired, by fuel-efficient vehicles, and making certain all vehicles are appropriate for their use. The large amount of emissions resulting from employee commute represents another opportunity for Bridgeport to take a lead in offering alternative, less fuel-intensive means for bringing employees to and from work, or establishing other means of reducing commuter emissions, perhaps by including telecommuting options.

Citywide, aggressive action must be taken to reduce greenhouse gas emissions particularly related to electricity and automobile transportation. While a city cannot mandate reduced energy use, it certainly can establish policies and programs, which promote energy education, site-specific energy-reduction measures, and energy-smart development on a citywide scale. With more than 50,000 residences in Bridgeport, even small energy savings in each residence will help create significant emission reductions. Planning for growth around the existing downtown area, with easy access to mass transportation, and with mixed uses comingled, represents another means to reduce greenhouse gas emissions on a larger scale.

Cities often have lower per capita emissions than suburban areas due to less reliance on personal automobile travel (given the availability of mass transit systems, ability to walk

and/or bicycle) and due to greater built-in energy efficiencies of buildings (smaller residence size and shared internal walls of multi-family homes and larger multi-residential structures as opposed to single-family detached units which have all sides with exterior surfaces). Bridgeport has a tremendous potential to build upon its existing infrastructure in such a way as to encourage reduced greenhouse gas emissions. The city already has a strong bus transit system which connects with a rail station serving both Metro-North Commuter rail trains and Amtrak trains. The majority of automobile traffic in Bridgeport is expressway traffic. Reducing automobile-related emissions will require evaluation of expressway and interstate vehicular traffic and alternatives. This area of greenhouse gas emissions control clearly extends beyond the City of Bridgeport's jurisdiction, to the State of Connecticut.

The next steps for Bridgeport are to set an emissions reduction goal and establish an action plan. Many cities set emissions reduction goals, which span somewhat long time periods, say ten or fifteen years. It seems preferable to establish shorter-term goals (one or two year goals) so as to emphasize the need for immediate action, and begin to take steps as soon as possible. Small steps have larger cumulative effect, are generally easier to get off the ground, and are easier to focus upon. An additional benefit of establishing shorter-term goals is it allows for faster and more frequent review of progress being made and quickly identifies areas in which an action plan may need to be amended. Thus, an overall action plan for municipal greenhouse gas reductions is likely to include several actions, which can be started immediately, and several actions, which may require longer-planning and execution. Overall, this inventory represents a strong start to Bridgeport's program of greater sustainability.

ICLEI Software-generated reports

Bridgeport

Community Greenhouse Gas Emissions in 2007
Summary Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)
Residential	298,809	29.3	3,734,966
Commercial	281,327	27.6	3,354,407
Industrial	87,323	8.6	1,256,856
Transportation	339,386	33.3	4,312,968
Waste	12,698	1.2	
Other	0	0.0	
Total	1,019,544	100.0	12,659,197

Bridgeport

Community Greenhouse Gas Emissions in 2007
Report by Source

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)
All Other Waste	9,697	1.0	
Diesel	63,636	6.2	808,765
Electricity	327,817	32.2	2,695,055
Food Waste	600	0.1	
Gasoline	264,445	25.9	3,411,261
Light Fuel Oil	114,850	11.3	1,531,692
Methane	0	0.0	
Natural Gas	236,097	23.2	4,212,424
Paper Products	1,755	0.2	
Plant Debris	462	0.0	
Wood/Textiles	185	0.0	
Total	1,019,544	100.0	12,659,197

Fuel costs include Buildings, Vehicle Fleet, Streetlights and Water/Sewage sectors only.
This report has been generated for Bridgeport, CT using STAPPA/ALAPCO and ICLEI's Clean Air and Climate Protection Software developed by Torrie Smith Associates Inc.

Community Greenhouse Gas Emissions in 2007
Report by Source

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)
Residential Sector			
Electricity	137,169	13.5	1,127,698
Light Fuel Oil	61,389	6.0	818,610
Natural Gas	100,250	9.8	1,788,657
Subtotal	298,809	29.3	3,734,966
Commercial Sector			
Electricity	150,933	14.8	1,240,855
Light Fuel Oil	47,241	4.6	629,948
Natural Gas	83,153	8.2	1,483,604
Subtotal	281,327	27.6	3,354,407
Industrial Sector			
Electricity	28,409	2.8	233,560
Light Fuel Oil	6,220	0.6	83,135
Natural Gas	52,694	5.2	940,162
Subtotal	87,323	8.6	1,256,856
Transportation Sector			
Diesel	63,636	6.2	808,765
Electricity	11,305	1.1	92,942
Gasoline	264,445	25.9	3,411,261
Subtotal	339,386	33.3	4,312,968
Waste Sector			
All Other Waste	9,697	1.0	
Food Waste	600	0.1	
Paper Products	1,755	0.2	
Plant Debris	462	0.0	
Wood/Textiles	185	0.0	
Subtotal	12,698	1.2	

Community Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)
Residential			
Bridgeport, CT			
Bridgeport Residential			
Electricity	137,169	13.5	1,127,698
Light Fuel Oil	61,389	6.0	818,610
Natural Gas	100,250	9.8	1,788,657
Subtotal Bridgeport Residential	298,809	29.3	3,734,966
Subtotal Residential	298,809	29.3	3,734,966
Commercial			
Bridgeport, CT			
Bridgeport Commercial			
Electricity	150,933	14.8	1,240,855
Light Fuel Oil	47,241	4.6	629,948
Natural Gas	83,153	8.2	1,483,604
Subtotal Bridgeport Commercial	281,327	27.6	3,354,407
Subtotal Commercial	281,327	27.6	3,354,407
Industrial			
Bridgeport, CT			
Bridgeport Industrial			
Electricity	28,409	2.8	233,560
Light Fuel Oil	6,220	0.6	83,135
Natural Gas	52,694	5.2	940,162
Subtotal Bridgeport Industrial	87,323	8.6	1,256,856

Bridgeport

Government Greenhouse Gas Emissions in 2007
Report by Source
(commute excluded)

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
CNG	0	0.0	0	2,965
Diesel	2,114	5.2	26,742	661,972
Electricity	21,871	54.1	179,803	10,958,903
Ethanol (E-10)	55	0.1	790	24,771
Gasoline	3,149	7.8	40,616	870,381
Natural Gas	13,242	32.8	236,270	4,096,244
Total	40,431	100.0	484,220	16,615,236

Fuel

Buildings, Vehicle Fleet, Streetlights and Water/Sewage sectors only.

Government Greenhouse Gas Emissions in 2007
Report by Source
(commute excluded)

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
Buildings Sector				
Electricity	11,585	28.7	95,239	5,721,079
Natural Gas	12,099	29.9	215,871	3,773,281
Subtotal	23,684	58.6	311,110	9,494,360
Vehicle Fleet Sector				
CNG	0	0.0	0	2,965
Diesel	2,114	5.2	26,742	661,972
Ethanol (E-10)	55	0.1	790	24,771
Gasoline	3,149	7.8	40,616	870,381
Subtotal	5,318	13.2	68,148	1,560,089
Streetlights Sector				
Electricity	3,296	8.2	27,100	2,693,733
Subtotal	3,296	8.2	27,100	2,693,733
Water/Sewage Sector				
Electricity	6,990	17.3	57,464	2,544,091
Natural Gas	1,143	2.8	20,399	322,963
Subtotal	8,133	20.1	77,863	2,867,054
Total				
	40,431	100.0	484,220	16,615,236

Bridgeport

Government Greenhouse Gas Emissions
Time Series Report
(commute excluded)

Year	2005	2007			
Buildings					
eCO2 (tonnes)	13,975.5	23,683.6	0.0	0.0	0.0
Energy (MMBtu)	114,896.1	311,109.8	0.0	0.0	0.0
Cost ($)	0.0	9,494,360.0	0.0	0.0	0.0
Vehicle Fleet					
eCO2 (tonnes)	3,626.9	5,317.6	0.0	0.0	0.0
Energy (MMBtu)	46,429.8	68,148.0	0.0	0.0	0.0
Cost ($)	0.0	1,560,089.0	0.0	0.0	0.0
Streetlights					
eCO2 (tonnes)	3,516.0	3,296.3	0.0	0.0	0.0
Energy (MMBtu)	28,905.9	27,099.8	0.0	0.0	0.0
Cost ($)	0.0	2,693,733.0	0.0	0.0	0.0
Water/Sewage					
eCO2 (tonnes)	7,733.0	8,133.0	0.0	0.0	0.0
Energy (MMBtu)	73,604.6	77,862.7	0.0	0.0	0.0
Cost ($)	1,856,575.0	2,867,054.0	0.0	0.0	0.0
Total					
eCO2 (tonnes)	28,851.5	40,430.5	0.0	0.0	0.0
Energy (MMBtu)	263,836.3	484,220.3	0.0	0.0	0.0
Cost ($)	1,856,575.0	16,615,236.0	0.0	0.0	0.0

Government Greenhouse Gas Emissions in 2007
Detailed Report (commute excluded)

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
Buildings				
Bridgeport, CT				
001 PF City Hall-45 Lyon Terrace				
Electricity	859	2.1	7,066	329,908
Natural Gas	330	0.8	5,891	101,017
Subtotal 001 PF City Hall-45 Lyon Terrace	1,190	2.9	12,956	430,925
002 PF City Hall Annex- 999 Broad Street				
Electricity	865	2.1	7,110	321,669
Natural Gas	503	1.2	8,978	161,648
Subtotal 002 PF City Hall Annex- 999 Broad Street	1,368	3.4	16,088	483,317
003 PF Public Facilities Complex				
Electricity	169	0.4	1,389	64,550
Natural Gas	176	0.4	3,137	44,355
Subtotal 003 PF Public Facilities Complex	345	0.9	4,525	108,905
004 PF Salt Shed				
Electricity	0	0.0	1	1,294
Subtotal 004 PF Salt Shed	0	0.0	1	1,294
005 PF Scale House				
Electricity	5	0.0	41	2,341
Subtotal 005 PF Scale House	5	0.0	41	2,341

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
006 PF Transfer Station				
Electricity	125	0.3	1,028	49,773
Natural Gas	139	0.3	2,478	43,086
Subtotal 006 PF Transfer Station	264	0.7	3,505	92,859
007 PF Eviction (Maintenance)				
Electricity	6	0.0	46	2,998
Subtotal 007 PF Eviction (Maintenance)	6	0.0	46	2,998
008 PF Bridge - Congress Street				
Electricity	2	0.0	15	1,146
Subtotal 008 PF Bridge - Congress Street	2	0.0	15	1,146
009 PF Klein				
Electricity	205	0.5	1,685	82,253
Natural Gas	104	0.3	1,856	35,048
Subtotal 009 PF Klein	309	0.8	3,541	117,301
010 PF McLevy Hall				
Electricity	87	0.2	714	35,612
Natural Gas	96	0.2	1,710	29,119
Subtotal 010 PF McLevy Hall	183	0.5	2,423	64,731
011 PF Health/Welfare				
Electricity	220	0.5	1,805	82,803
Natural Gas	134	0.3	2,388	43,708
Subtotal 011 PF Health/Welfare	353	0.9	4,193	126,511

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
012 PF Wheeler Center				
Electricity	41	0.1	333	17,410
Natural Gas	64	0.2	1,136	19,519
Subtotal 012 PF Wheeler Center	104	0.3	1,470	36,929
013 PF Ralphola Taylor Center				
Electricity	100	0.2	822	38,498
Natural Gas	55	0.1	973	16,800
Subtotal 013 PF Ralphola Taylor Center	155	0.4	1,795	55,298
014 PF Eisenhower				
Electricity	143	0.4	1,180	55,224
Natural Gas	262	0.6	4,673	79,115
Subtotal 014 PF Eisenhower	405	1.0	5,853	134,339
015 PF Black Rock Senior Center/PAL				
Electricity	9	0.0	70	4,437
Natural Gas	59	0.1	1,060	18,625
Subtotal 015 PF Black Rock Senior Center/PAL	68	0.2	1,130	23,062
016 PF PAL				
Electricity	14	0.0	118	6,796
Natural Gas	26	0.1	466	8,772
Subtotal 016 PF PAL	40	0.1	584	15,568
017 PF Majestic/Palace Theatres				
Electricity	6	0.0	49	3,181
Subtotal 017 PF Majestic/Palace Theatres	6	0.0	49	3,181

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
018 PF Christmas Lights				
Electricity	5	0.0	40	2,582
Subtotal 018 PF Christmas Lights	5	0.0	40	2,582
019 PF Barnum Museum				
Electricity	96	0.2	789	38,261
Natural Gas	45	0.1	810	14,476
Subtotal 019 PF Barnum Museum	141	0.3	1,599	52,737
020 PF North End Senior Center				
Natural Gas	3	0.0	46	1,087
Subtotal 020 PF North End Senior Center	3	0.0	46	1,087
021 PFFD Fire Headquarter				
Electricity	220	0.5	1,812	86,330
Natural Gas	130	0.3	2,312	38,033
Subtotal 021 PFFD Fire Headquarter	350	0.9	4,123	124,363
022 PFFD Fire-Engine 3/4				
Electricity	70	0.2	576	27,224
Natural Gas	58	0.1	1,042	17,970
Subtotal 022 PFFD Fire-Engine 3/4	128	0.3	1,618	45,194
023 PFFD Fire-Engine 6				
Electricity	69	0.2	570	27,408
Natural Gas	68	0.2	1,213	21,073
Subtotal 023 PFFD Fire-Engine 6	137	0.3	1,782	48,481

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
024 PFFD Fire-Engine 7/11				
Electricity	37	0.1	307	16,929
Natural Gas	85	0.2	1,513	26,461
Subtotal 024 PFFD Fire-Engine 7/11	122	0.3	1,820	43,390
025 PFFD Fire-Engine 10				
Electricity	65	0.2	535	27,917
Natural Gas	19	0.0	337	6,756
Subtotal 025 PFFD Fire-Engine 10	84	0.2	872	34,673
026 PFFD Fire-Engine 12				
Electricity	9	0.0	75	4,300
Natural Gas	42	0.1	753	13,730
Subtotal 026 PFFD Fire-Engine 12	51	0.1	828	18,030
027 PFFD Fire-Engine 15				
Electricity	16	0.0	132	5,916
Natural Gas	32	0.1	562	10,204
Subtotal 027 PFFD Fire-Engine 15	48	0.1	694	16,120
028 PFFD Fire-Engine 16				
Electricity	44	0.1	359	17,513
Natural Gas	55	0.1	983	17,150
Subtotal 028 PFFD Fire-Engine 16	99	0.2	1,343	34,663
031 PFFD Fire-Civil Defense Sirens				
Electricity	0	0.0	2	356
Subtotal 031 PFFD Fire-Civil Defense Sirens	0	0.0	2	356

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
032 PFL Library-Burroughs				
Electricity	205	0.5	1,681	90,173
Natural Gas	150	0.4	2,670	63,747
Subtotal 032 PFL Library-Burroughs	354	0.9	4,351	153,920
033 PFL Library-Black Rock				
Electricity	3	0.0	27	1,565
Natural Gas	0	0.0	5	1,477
Subtotal 033 PFL Library-Black Rock	4	0.0	32	3,042
034 PFL Library-North End				
Electricity	88	0.2	727	36,660
Natural Gas	34	0.1	599	10,629
Subtotal 034 PFL Library-North End	122	0.3	1,326	47,289
035 PFL Library-Old Mill Green				
Electricity	19	0.0	157	9,545
Natural Gas	17	0.0	296	5,957
Subtotal 035 PFL Library-Old Mill Green	36	0.1	453	15,502
036 PFL Library-Newfield				
Electricity	19	0.0	156	10,132
Subtotal 036 PFL Library-Newfield	19	0.0	156	10,132
037 PFPD Police Headquarters				
Electricity	251	0.6	2,064	118,073
Natural Gas	234	0.6	4,178	72,011
Subtotal 037 PFPD Police Headquarters	485	1.2	6,243	190,084

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
038 PFPD Police-WS Precinct				
Electricity	29	0.1	240	12,499
Natural Gas	20	0.1	365	6,681
Subtotal 038 PFPD Police-WS Precinct	50	0.1	606	19,180
039 PFPD Police-ES Precinct				
Electricity	29	0.1	242	12,581
Natural Gas	40	0.1	719	12,631
Subtotal 039 PFPD Police-ES Precinct	70	0.2	961	25,212
040 PFPD Police-Animal Shelter				
Electricity	51	0.1	423	21,929
Natural Gas	57	0.1	1,014	17,462
Subtotal 040 PFPD Police-Animal Shelter	108	0.3	1,436	39,391
041 PFPD Police-Animal Shelter/Narcotics				
Electricity	44	0.1	362	19,287
Natural Gas	107	0.3	1,908	31,699
Subtotal 041 PFPD Police-Animal Shelter/Narcotics	151	0.4	2,270	50,986
042 PFPD Police-Police Academy/Newfield School				
Electricity	38	0.1	312	18,512
Natural Gas	52	0.1	920	14,113
Subtotal 042 PFPD Police-Police Academy/Newfield School	90	0.2	1,233	32,625
043 PFPD Police-Community Services				
Electricity	11	0.0	92	5,264
Natural Gas	27	0.1	489	8,544
Subtotal 043 PFPD Police-Community Services	39	0.1	581	13,808

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
044 PFPK Parks-Complex Offices/Garage				
Electricity	62	0.2	511	25,377
Natural Gas	76	0.2	1,356	23,803
Subtotal 044 PFPK Parks-Complex Offices/Garage	138	0.3	1,867	49,180
045 PFPK Parks-Seaside Park 1				
Electricity	37	0.1	303	18,364
Subtotal 045 PFPK Parks-Seaside Park 1	37	0.1	303	18,364
046 PFPK Parks-Seaside Park 2				
Electricity	2	0.0	15	3,098
Subtotal 046 PFPK Parks-Seaside Park 2	2	0.0	15	3,098
048 PFPK Parks-Washington Park				
Electricity	10	0.0	85	5,932
Subtotal 048 PFPK Parks-Washington Park	10	0.0	85	5,932
049 PFPK Parks-Went Field Firehouse				
Electricity	1	0.0	12	1,338
Natural Gas	15	0.0	272	4,365
Subtotal 049 PFPK Parks-Went Field Firehouse	17	0.0	284	5,703
050 PFPK Parks-Irrigation				
Electricity	1	0.0	6	3,595
Subtotal 050 PFPK Parks-Irrigation	1	0.0	6	3,595

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
051 PFPK Parks-Street/Lights, HPS				
Electricity	284	0.7	2,335	192,560
Subtotal 051 PFPK Parks-Street/Lights, HPS	284	0.7	2,335	192,560
052 PFPKG FW Golf 2390 Easton Tnpk.				
Electricity	94	0.2	770	34,918
Natural Gas	98	0.2	1,741	25,558
Subtotal 052 PFPKG FW Golf 2390 Easton Tnpk.	191	0.5	2,512	60,476
053 PFFKG FW Golf 1062 Church Hill Rd				
Electricity	4	0.0	31	2,151
Natural Gas	9	0.0	162	2,835
Subtotal 053 PFFKG FW Golf 1062 Church Hill Rd	13	0.0	193	4,986
054 PFPKG FW Golf 1060 Church Hill Rd				
Electricity	5	0.0	42	3,733
Natural Gas	29	0.1	511	8,090
Subtotal 054 PFPKG FW Golf 1060 Church Hill Rd	34	0.1	553	11,823

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
055 PFFKG FW Golf Pump House				
Electricity	0	0.0	0	380
Subtotal 055 PFFKG FW Golf Pump House	0	0.0	0	380
056 PFPKZ Beardsley Zoo 1				
Electricity	210	0.5	1,729	88,062
Natural Gas	262	0.6	4,666	83,294
Subtotal 056 PFPKZ Beardsley Zoo 1	472	1.2	6,395	171,356
057 PFPKZ Beardsley Zoo 2- Greenhouse				
Electricity	139	0.3	1,143	55,290
Natural Gas	116	0.3	2,067	35,281
Subtotal 057 PFPKZ Beardsley Zoo 2- Greenhouse	255	0.6	3,209	90,571
058 PFX Airport				
Electricity	284	0.7	2,337	119,953
Natural Gas	253	0.6	4,514	69,807
Subtotal 058 PFX Airport	537	1.3	6,851	189,760
059 xBOE Administration Building				
Electricity	191	0.5	1,568	106,691
Natural Gas	140	0.3	2,502	43,850
Subtotal 059 xBOE Administration Building	331	0.8	4,070	150,541

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
060 xBOE Aquaculture School				
Electricity	158	0.4	1,300	88,460
Natural Gas	263	0.7	4,689	82,174
Subtotal 060 xBOE Aquaculture School	421	1.0	5,989	170,634
061 xBOE Barnum School				
Electricity	64	0.2	530	36,058
Natural Gas	100	0.2	1,779	31,180
Subtotal 061 xBOE Barnum School	164	0.4	2,309	67,238
062xBOE Bassick School				
Electricity	345	0.9	2,836	192,997
Natural Gas	641	1.6	11,442	200,488
Subtotal 062xBOE Bassick School	986	2.4	14,277	393,485
063 xBOE Batalla School				
Electricity	474	1.2	3,895	265,105
Natural Gas	204	0.5	3,643	63,827
Subtotal 063 xBOE Batalla School	678	1.7	7,538	328,932
064 xBOE Beardsley School				
Electricity	78	0.2	638	43,405
Natural Gas	211	0.5	3,763	65,940
Subtotal 064 xBOE Beardsley School	288	0.7	4,401	109,345
065 xBOE Black Rock School				
Electricity	75	0.2	613	41,692
Natural Gas	122	0.3	2,180	38,196
Subtotal 065 xBOE Black Rock School	197	0.5	2,793	79,888

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
066 xBOE Blackham School				
Electricity	216	0.5	1,776	120,905
Natural Gas	524	1.3	9,355	163,923
Subtotal 066 xBOE Blackham School	740	1.8	11,132	284,828
067 xBOE Bryant School				
Electricity	102	0.3	838	57,032
Natural Gas	73	0.2	1,304	22,836
Subtotal 067 xBOE Bryant School	175	0.4	2,142	79,868
068 xBOE Central School				
Electricity	673	1.7	5,532	376,561
Natural Gas	885	2.2	15,786	276,613
Subtotal 068 xBOE Central School	1,558	3.9	21,319	653,174
069 xBOE Columbus School				
Electricity	140	0.3	1,151	78,333
Natural Gas	13	0.0	223	3,918
Subtotal 069 xBOE Columbus School	153	0.4	1,374	82,251
070 xBOE Cross School				
Electricity	81	0.2	668	45,459
Natural Gas	196	0.5	3,498	61,302
Subtotal 070 xBOE Cross School	277	0.7	4,166	106,761
071 xBOE Curiale School				
Electricity	242	0.6	1,993	135,644
Natural Gas	133	0.3	2,381	41,719
Subtotal 071 xBOE Curiale School	376	0.9	4,374	177,363

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
072 xBOE Dunbar School				
Electricity	220	0.5	1,810	123,171
Natural Gas	190	0.5	3,390	59,403
Subtotal 072 xBOE Dunbar School	410	1.0	5,199	182,574
073 xBOE Edison School				
Electricity	70	0.2	578	39,320
Natural Gas	120	0.3	2,138	37,459
Subtotal 073 xBOE Edison School	190	0.5	2,716	76,779
074 xBOE Garfield School				
Electricity	52	0.1	424	28,868
Natural Gas	103	0.3	1,829	32,047
Subtotal 074 xBOE Garfield School	154	0.4	2,253	60,915
075 xBOE Hall School (and Annex)				
Electricity	55	0.1	450	30,631
Natural Gas	124	0.3	2,214	38,790
Subtotal 075 xBOE Hall School (and Annex)	179	0.4	2,664	69,421
076 xBOE Hallen School				
Electricity	96	0.2	786	53,473
Natural Gas	174	0.4	3,097	54,269
Subtotal 076 xBOE Hallen School	269	0.7	3,883	107,742
077 xBOE Harding School				
Electricity	301	0.7	2,477	168,606
Natural Gas	967	2.4	17,256	302,374
Subtotal 077 xBOE Harding School	1,268	3.1	19,733	470,980

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
078 xBOE Holy Rosary School				
Electricity	2	0.0	12	846
Natural Gas	0	0.0	2	32
Subtotal 078 xBOE Holy Rosary School	2	0.0	14	878
079 xBOE Hooker School				
Electricity	109	0.3	898	61,088
Natural Gas	274	0.7	4,897	85,792
Subtotal 079 xBOE Hooker School	384	0.9	5,794	146,880
080 xBOE Howe School				
Electricity	28	0.1	230	15,657
Natural Gas	1	0.0	13	226
Subtotal 080 xBOE Howe School	29	0.1	243	15,883
082 xBOE JFK Campus				
Electricity	691	1.7	5,681	386,691
Natural Gas	304	0.8	5,422	95,003
Subtotal 082 xBOE JFK Campus	995	2.5	11,103	481,694
083 xBOE Longfellow School				
Electricity	136	0.3	1,119	76,181
Natural Gas	221	0.5	3,943	69,089
Subtotal 083 xBOE Longfellow School	357	0.9	5,062	145,270
084 xBOE Madison School				
Electricity	146	0.4	1,201	81,716
Natural Gas	205	0.5	3,649	63,945
Subtotal 084 xBOE Madison School	351	0.9	4,850	145,661

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
085 xBOE Maintenance Garage				
Electricity	27	0.1	222	15,141
Natural Gas	134	0.3	2,382	41,745
Subtotal 085 xBOE Maintenance Garage	161	0.4	2,604	56,886
086 xBOE Maplewood School				
Electricity	82	0.2	675	45,964
Natural Gas	66	0.2	1,185	20,773
Subtotal 086 xBOE Maplewood School	149	0.4	1,861	66,737
087 xBOE Maplewood School Annex				
Electricity	36	0.1	292	19,897
Natural Gas	110	0.3	1,964	34,413
Subtotal 087 xBOE Maplewood School Annex	146	0.4	2,256	54,310
088 xBOE Marin School				
Electricity	368	0.9	3,022	205,671
Natural Gas	235	0.6	4,201	73,605
Subtotal 088 xBOE Marin School	603	1.5	7,223	279,276
089 xBOE McKinley School				
Electricity	62	0.2	513	34,914
Natural Gas	3	0.0	53	922
Subtotal 089 xBOE McKinley School	65	0.2	566	35,836
090 xBOE Park City Magnet School				
Electricity	79	0.2	653	44,432
Natural Gas	256	0.6	4,566	80,010
Subtotal 090 xBOE Park City Magnet School	335	0.8	5,219	124,442

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
091 xBOE Read School				
Electricity	150	0.4	1,229	83,683
Natural Gas	295	0.7	5,255	92,070
Subtotal 091 xBOE Read School	444	1.1	6,484	175,753
092 xBOE Roosevelt School				
Electricity	172	0.4	1,412	96,079
Natural Gas	179	0.4	3,200	56,083
Subtotal 092 xBOE Roosevelt School	351	0.9	4,612	152,162
093 xBOE Sheridan School				
Electricity	88	0.2	726	49,426
Natural Gas	3	0.0	46	799
Subtotal 093 xBOE Sheridan School	91	0.2	772	50,225
094 xBOE Skane School				
Electricity	50	0.1	411	27,945
Natural Gas	153	0.4	2,731	47,853
Subtotal 094 xBOE Skane School	203	0.5	3,141	75,798
096 xBOE Waltersville School				
Electricity	108	0.3	885	60,269
Natural Gas	4	0.0	71	1,243
Subtotal 096 xBOE Waltersville School	112	0.3	957	61,512
097 xBOE Waltersville School Annex				
Electricity	28	0.1	231	15,712
Subtotal 097 xBOE Waltersville School Annex	28	0.1	231	15,712

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
098 xBOE Webster School				
Electricity	32	0.1	266	18,083
Natural Gas	87	0.2	1,544	27,071
Subtotal 098 xBOE Webster School	119	0.3	1,810	45,154
099 xBOE Whittier School				
Electricity	35	0.1	288	19,566
Natural Gas	4	0.0	70	1,235
Subtotal 099 xBOE Whittier School	39	0.1	358	20,801
1.001 xBOE Winthrop School				
Electricity	115	0.3	942	64,107
Natural Gas	305	0.8	5,440	95,328
Subtotal 1.001 xBOE Winthrop School	419	1.0	6,382	159,435
Subtotal Buildings	23,684	58.6	311,110	9,494,360
Vehicle Fleet				
Bridgeport, CT				
001 Aquacultural School				
Gasoline	3	0.0	38	892
Subtotal 001 Aquacultural School	3	0.0	38	892
002 Board of Education				
Gasoline	456	1.1	5,887	104,661
Diesel	20	0.1	258	6,533
Subtotal 002 Board of Education	477	1.2	6,145	111,194
003 Mayor				
Gasoline	16	0.0	211	4,120

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
CNG	0	0.0	0	13
Subtotal 003 Mayor	16	0.0	211	4,133
004 Nutrition				
Gasoline	19	0.0	245	3,992
Diesel	45	0.1	565	13,929
Subtotal 004 Nutrition	64	0.2	810	17,921
005 Police Department				
Gasoline	861	2.1	11,104	257,902
Diesel	3	0.0	34	866
Subtotal 005 Police Department	864	2.1	11,139	258,768
006 Special Education				
Gasoline	331	0.8	4,267	97,316
Diesel	103	0.3	1,302	30,745
Subtotal 006 Special Education	434	1.1	5,569	128,061
007 Roadway				
Gasoline	85	0.2	1,097	24,481
Diesel	484	1.2	6,129	149,543
CNG	0	0.0	0	1,856
Subtotal 007 Roadway	569	1.4	7,226	175,880
008 Recycling				
Gasoline	2	0.0	29	663
Diesel	111	0.3	1,404	35,040
Subtotal 008 Recycling	113	0.3	1,432	35,703

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	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
009 Sanitation				
Gasoline	57	0.1	740	14,659
Diesel	474	1.2	5,993	151,486
Subtotal 009 Sanitation	531	1.3	6,733	166,145
010 Vehicle Maintenance				
Gasoline	12	0.0	155	3,492
Diesel	3	0.0	42	1,009
Subtotal 010 Vehicle Maintenance	15	0.0	197	4,501
011 Aging				
Gasoline	3	0.0	38	860
Diesel	39	0.1	488	12,112
Subtotal 011 Aging	41	0.1	526	12,972
012 Building				
Gasoline	18	0.0	237	5,229
Subtotal 012 Building	18	0.0	237	5,229
013 CAO				
Gasoline	6	0.0	71	1,505
Subtotal 013 CAO	6	0.0	71	1,505
014 CMS				
Gasoline	7	0.0	89	1,936
Subtotal 014 CMS	7	0.0	89	1,936
016 Carpool				
Gasoline	5	0.0	62	1,481
Subtotal 016 Carpool	5	0.0	62	1,481

Government Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
017 City Attorney				
Gasoline	8	0.0	106	2,208
Diesel	0	0.0	2	30
Subtotal 017 City Attorney	8	0.0	108	2,238
018 Engineering				
Gasoline	10	0.0	126	2,789
CNG	0	0.0	0	255
Subtotal 018 Engineering	10	0.0	126	3,044
019 Finance				
Gasoline	14	0.0	179	3,990
Subtotal 019 Finance	14	0.0	179	3,990
020 Harbormaster				
Gasoline	7	0.0	88	1,990
Subtotal 020 Harbormaster	7	0.0	88	1,990
021 Health				
Gasoline	42	0.1	535	11,926
Subtotal 021 Health	42	0.1	535	11,926
022 Housing				
Gasoline	36	0.1	465	10,297
Subtotal 022 Housing	36	0.1	465	10,297

Government Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
023 ITS				
Gasoline	3	0.0	34	730
Subtotal 023 ITS	3	0.0	34	730
024 LEAD				
Gasoline	4	0.0	57	1,260
Subtotal 024 LEAD	4	0.0	57	1,260
025 Library				
Gasoline	8	0.0	109	2,398
CNG	0	0.0	0	56
Subtotal 025 Library	8	0.0	109	2,454
027 Mailroom				
Gasoline	2	0.0	23	513
Subtotal 027 Mailroom	2	0.0	23	513
028 OPED				
Gasoline	12	0.0	159	3,437
Subtotal 028 OPED	12	0.0	159	3,437
029 OPM				
Gasoline	7	0.0	91	1,952
Subtotal 029 OPM	7	0.0	91	1,952
030 Parks				
Gasoline	85	0.2	1,093	24,494
Diesel	16	0.0	199	4,972
CNG	0	0.0	0	242
Subtotal 030 Parks	100	0.2	1,291	29,708

Government Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
031 Parks-Park equipment				
Gasoline	254	0.6	3,279	68,399
Diesel	162	0.4	2,046	50,647
Subtotal 031 Parks-Park equipment	416	1.0	5,325	119,046
032 Parks FW golf course equipment				
Gasoline	115	0.3	1,479	30,855
Diesel	44	0.1	552	13,669
Subtotal 032 Parks FW golf course equipment	158	0.4	2,031	44,524
033 Purchasing				
Gasoline	2	0.0	29	627
Subtotal 033 Purchasing	2	0.0	29	627
034 Public Works Administration				
Gasoline	30	0.1	393	8,688
Subtotal 034 Public Works Administration	30	0.1	393	8,688
035 Public Works Maintenance				
Gasoline	78	0.2	1,003	22,147
Diesel	17	0.0	219	5,469
CNG	0	0.0	0	543
Subtotal 035 Public Works Maintenance	95	0.2	1,222	28,159

Government Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
036 Tax Assessor				
Gasoline	5	0.0	65	1,461
Subtotal 036 Tax Assessor	5	0.0	65	1,461
037 Voters				
Gasoline	5	0.0	70	1,490
Subtotal 037 Voters	5	0.0	70	1,490
038 W&M				
Gasoline	1	0.0	14	315
Subtotal 038 W&M	1	0.0	14	315
039 Welfare				
Gasoline	1	0.0	7	158
Subtotal 039 Welfare	1	0.0	7	158
040 WIC				
Gasoline	1	0.0	18	407
Subtotal 040 WIC	1	0.0	18	407
041 Zoning				
Gasoline	4	0.0	57	1,230
Subtotal 041 Zoning	4	0.0	57	1,230
042 Zoo				
Gasoline	9	0.0	121	2,737
Diesel	1	0.0	11	289
Subtotal 042 Zoo	10	0.0	131	3,026

Government Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
043 Fire Department				
Gasoline	157	0.4	2,028	42,230
Diesel	306	0.8	3,877	95,966
Subtotal 043 Fire Department	464	1.1	5,905	138,196
044 WPCA				
Gasoline	366	0.9	4,720	98,464
Diesel	286	0.7	3,623	89,667
Subtotal 044 WPCA	652	1.6	8,343	188,131
045 Airport				
Ethanol (E-10)	55	0.1	790	24,771
Subtotal 045 Airport	55	0.1	790	24,771
Subtotal Vehicle Fleet	5,318	13.2	68,148	1,560,089
Streetlights				
Bridgeport, CT				
1 Streetlights Aggregate				
Electricity	3,120	7.7	25,654	2,587,062
Subtotal 1 Streetlights Aggregate	3,120	7.7	25,654	2,587,062
2 Traffic Lights Aggregate				
Electricity	176	0.4	1,446	106,671
Subtotal 2 Traffic Lights Aggregate	176	0.4	1,446	106,671

Government Greenhouse Gas Emissions in 2007
Detailed Report

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
Subtotal Streetlights	3,296	8.2	27,100	2,693,733
Water/Sewage				
Bridgeport, CT				
1. WPCA West Side Facility				
Electricity	4,467	11.0	36,725	1,624,287
Natural Gas	470	1.2	8,390	138,966
Subtotal 1. WPCA West Side Facility	4,937	12.2	45,115	1,763,253
2. WPCA East Side Facility				
Electricity	2,308	5.7	18,974	830,747
Natural Gas	672	1.7	11,996	182,999
Subtotal 2. WPCA East Side Facility	2,980	7.4	30,971	1,013,746
3. WPCA Pump Stations				
Electricity	210	0.5	1,725	85,733
Natural Gas	1	0.0	12	998
Subtotal 3. WPCA Pump Stations	210	0.5	1,737	86,731
4. WPCA CSO Operations				
Electricity	5	0.0	40	3,324
Subtotal 4. WPCA CSO Operations	5	0.0	40	3,324
Subtotal Water/Sewage	8,133	20.1	77,863	2,867,054
Total	40,431	100.0	484,220	16,615,236

Bridgeport

Government Greenhouse Gas Emissions in 2007
Summary Report
(includes commute)

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
Buildings	23,684	46.3	311,110	9,494,360
Vehicle Fleet	5,318	10.4	68,148	1,560,089
Employee Commute	10,776	21.0	139,005	
Streetlights	3,296	6.4	27,100	2,693,733
Water/Sewage	8,133	15.9	77,863	2,867,054
Total	51,206	100.0	623,225	16,615,236

Bridgeport

Government Greenhouse Gas Emissions in 2007
Report by Source
(includes commute)

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
CNG	0	0.0	0	2,965
Diesel	2,114	4.1	26,742	661,972
Electricity	21,871	42.7	179,803	10,958,903
Ethanol (E-10)	55	0.1	790	24,771
Gasoline	13,924	27.2	179,621	870,381
Natural Gas	13,242	25.9	236,270	4,096,244
Total	51,206	100.0	623,225	16,615,236

Fuel costs include Buildings, Vehicle Fleet, Streetlights and Water/Sewage sectors only.
This report has been generated for Bridgeport, CT using STAPPA/ALAPCO and ICLEI's Clean Air and Climate Protection Software developed by Torrie Smith Associate

Government Greenhouse Gas Emissions in 2007
Report by Source
(includes commute)

	Equiv CO_2 (tonnes)	Equiv CO_2 (%)	Energy (MMBtu)	Cost ($)
Buildings Sector				
Electricity	11,585	22.6	95,239	5,721,079
Natural Gas	12,099	23.6	215,871	3,773,281
Subtotal	23,684	46.3	311,110	9,494,360
Vehicle Fleet Sector				
CNG	0	0.0	0	2,965
Diesel	2,114	4.1	26,742	661,972
Ethanol (E-10)	55	0.1	790	24,771
Gasoline	3,149	6.1	40,616	870,381
Subtotal	5,318	10.4	68,148	1,560,089
Employee Commute Sector				
Gasoline	10,776	21.0	139,005	
Subtotal	10,776	21.0	139,005	
Streetlights Sector				
Electricity	3,296	6.4	27,100	2,693,733
Subtotal	3,296	6.4	27,100	2,693,733
Water/Sewage Sector				
Electricity	6,990	13.6	57,464	2,544,091
Natural Gas	1,143	2.2	20,399	322,963
Subtotal	8,133	15.9	77,863	2,867,054
Total				
	51,206	100.0	623,225	16,615,236

VII. Methodology

A. Inventory overview

This inventory contains two separate analyses: a community inventory, which is an inventory of greenhouse gases emitted by the entire City of Bridgeport, and a municipal inventory, which is an inventory of greenhouse gases resulting directly from government operations.

Clean Air and Climate Protection (CACP) software, developed by the National Association of Clean Air Agencies (formerly STAPPA and ALAPCO), ICLEI-Local Governments for Sustainability (formerly International Cities for Local Environmental Action (ICLEI)), and Torrie Smith Associates Inc., is used for both analyses. This software translates data on energy use, transportation, solid waste disposal, and other inputs into greenhouse gas emissions. In addition, the software quantifies the effects certain specific actions have on avoiding or reducing carbon dioxide equivalent (CO_2e) emissions. This CACP software is the software used by most participants in the Cities for Climate Protection (CCP) Campaign.

Outputs generated by the CACP software in this inventory are reported as metric tons of carbon dioxide equivalent (CO_2e). CO_2e is a common unit that allows different kinds of greenhouse gases to be added together and weighted according to their relative contributions to global climate change. In the atmosphere, methane and nitrous oxide are much less abundant than carbon dioxide. However, each of these gases has a greater potential to impact global climate change than does carbon dioxide. Converting methane and nitrous oxide into CO_2e takes into account their greater global warming potentials and allows for emissions accounting which puts impact on a common scale, regardless of abundance.

In accordance with the reporting principles and methodology of ICLEI's Cities for Climate Protection, which follow those contained in "Greenhouse Gas Protocols; World Resources Institute and World Business Council for Sustainable Development," every attempt is made to conduct this inventory in a manner which is transparent, complete, accurate, and consistent, so as to allow for meaningful comparisons over time

B. Base year and background analysis years

2007 is designated the base year for analysis due to the availability of information across all sectors. It is important to note that data input for municipal operations for the 2007 base year are data from fiscal year 2008 (July 1, 2007 to June 30, 2008). Additional information for 2006 (which includes municipal operations for FY 2007) and 2005 (which includes municipal operations for FY 2006) is analyzed for comparison in sectors for which data are available.

C. Coefficients

1. Electricity Coefficient

Upon recommendation from ICLEI, this inventory uses an EGrid emissions coefficient for electricity generation, specifically emissions for Egrid Subregion 1 – NPCC New England. Former inventories for many municipalities have used emissions coefficients for NERC regions (Bridgeport is in NERC Region 7) but ICLEI is changing its electricity emissions protocol to include the use of EGrid emissions coefficients as the new and preferred method. This will put emissions accounting in line with the protocol of the Climate Registry. EGrid regions are based on U.S. EPA regions. The U.S. EPA has only released emissions coefficients for years up to 2004. This inventory, therefore, uses 2004 data for years after 2004, per recommendation of ICLEI. Table 1 describes specific coefficients used for the calculation of greenhouse gas emissions from electricity use.

In December 2007 the City of Bridgeport began purchasing part of its electricity for municipal buildings through Constellation NewEnergy as "NewMix Super" (Green-e-Any), which is composed of electricity generated from the following sources within the United States:

Constellation NewMix Super (Green-e-Any)

20%	Green E certified Renewable, including biomass, geothermal, small, wind, solar, or low impact hydroelectric
2%	Other renewable
8%	Large hydroelectric
42%	Coal
6%	Natural Gas
2%	Oil
21%	Other
100%	Total (actually adds up to 101% due to rounding)

Purchase of renewable energy does not necessarily mean the actual electricity *delivered* to Bridgeport municipal facilities is generated by renewable resources. Bridgeport cannot, under the existing electricity supply structure, change what electricity actually comes to its buildings. Electricity delivered to Bridgeport municipal facilities comes from the local operating grid, and this inventory, following ICLEI protocol uses the emissions coefficients relevant to this grid, which is EGrid Subregion 1 – NCPP New England, rather than coefficients tailored specifically to the "NewMix Super" (Green-e-Any) purchase. "NewMix Super" (Green-e-Any) sources of electricity may be located anywhere in the United States, and these sources are likely supplying customers elsewhere. To avoid double counting with these other customers, ICLEI protocol requires emissions calculations to be based on the sources of electricity, which are actually supplying electricity to the end customer (the City of Bridgeport).

D. Community inventory

The community inventory determines the greenhouse gas emissions resulting from all energy used and waste produced from Bridgeport operations citywide.

In particular, it investigates the following:

Residential Sector – electricity, natural gas, and fuel oil consumption in residential buildings in Bridgeport
Commercial Sector – electricity, natural gas, and fuel oil consumption in commercial buildings in Bridgeport
Industrial Sector – electricity, natural gas, and fuel oil consumption in industrial buildings in Bridgeport
Transportation – gasoline and diesel fuel used by on-road vehicles in Bridgeport, diesel and electricity used by railroad systems running through Bridgeport, marine fuel loaded into boats in Bridgeport
Waste – amount and composition of waste generated by all sectors within Bridgeport
Other – greenhouse gas emissions resulting from particular facilities or circumstances; in the City of Bridgeport, one closed landfill is a potential source of methane

1. Community electricity

Electricity consumption data for the City of Bridgeport were provided by Garrett Sheehan of the United Illuminating Company. Kilowatt-hours for the following customer base are provided for the June 1, 2007 to May 31, 2008 time period:

Residential	Industrial
Commercial	Municipal
Commercial less than 150 kW	State

The STAPPA/ALAPCO – ICLEI CACP Software requests inputs for Residential, Commercial, Industrial and Transportation Sectors. For this inventory, the following categories are included in the Commercial input data: Commercial, Commercial less than 150 kW, Municipal, and State.

The June 1, 2007 to May 31, 2008 reporting period does not overlap exactly with FY 08, nor is it a true calendar year, but its time period incorporates all seasons of the year, full heating and full air conditioning seasons, and is used for this 2007 inventory. Total electricity purchase for this one-year time period is 762,419,176 kWh (see Table 2).

For comparison purposes, municipal electricity use is also calculated using population data from the U.S. Census and Connecticut Office of Policy and Management, and data on electricity consumption in Connecticut as provide by the Energy Information Administration's State Data Directory, a methodology used by several other towns.

Following this methodology, Bridgeport electricity consumption is calculated to be:

$$\frac{\text{2007 Bridgeport population}}{\text{2007 Connecticut population}} \times (\text{2007 Connecticut Electricity Consumption})$$

$$\frac{141{,}627 \text{ Bpt.}}{3{,}502{,}309 \text{ CT}} = (.040381795) \times (13{,}379{,}000 \text{ MWh CT residential electricity use})$$

= 541,022.4035 MWh = 541,022,400 kWh residential electricity for 2007
(rounded to 541,022,000 kWh)

Similar calculations are conducted for commercial, industrial, transportation sectors, as well as for total electricity sales, and yield the following:

Bridgeport commercial electricity sales 2007	=	610,374,000 kWh
Bridgeport industrial electricity sales 2007	=	220,388,000 kWh
Bridgeport transportation electricity sales 2007	=	8,088,000 kWh
Bridgeport total electricity sales 2007	=	1,379,872,000 kWh

This methodology yields significantly different values (nearly double) than the actual values reported by UI, which is important to note. See Tables 3 through 7 for population data and sector-specific calculations. This inventory uses actual values reported by UI in calculating greenhouse gas emissions.

It is worth noting that PSEG operates a 533 MW electrical power generation facility in Bridgeport, of which one part is operated by coal, and two parts are fueled by oil. Facility operations create greenhouse gas emissions since fossil fuels are burned. Following the protocol for conducting ICLEI CACP inventories, emissions from this facility are not specifically made a part of either Bridgeport's community inventory or Bridgeport's municipal inventory. ICLEI carbon and clean air emissions inventories calculate emissions based on the amount of electricity **used** in the given community, and based on an electricity coefficient, which reflects the average generation emissions. Once electricity is produced by PSEG operations (and by the Wheelabrator trash to energy facility, also located in Bridgeport), it is sent into the electrical grid and distributed wherever it is needed. For purposes of this inventory, emissions resulting from electricity use are calculated using coefficients for EPA Egrid Subregion 1 – NPCC New England.

2. Community natural gas

Southern Connecticut Gas Company is in the process of providing usage data for Bridgeport. Until SCGC data are available, natural gas use is calculated using population data from the U.S. Census and Connecticut Office of Policy and Management, and data on natural gas consumption in Connecticut as provided by the Energy Information Administration's State Data Directory (see Table 9). This methodology is used by several other towns, and is used for comparison purposes in the investigation of Bridgeport's electricity use. As with electricity use, it is believed that this method likely over reports

energy use in Bridgeport, and thus over reports associated emissions. However, in the absence of more specific data, this methodology is followed, and Bridgeport natural gas consumption is calculated to be:

$$\frac{\text{2007 Bridgeport population}}{\text{2007 Connecticut population}} \times \text{(2007 Connecticut natural gas consumption)}$$

$$\frac{\text{141,627 Bpt.}}{\text{3,502,309 CT}} = (0.040381795) \times \text{(433,600,000 CCF CT residential natural gas use)}$$

= 17,481,531 CCF residential natural gas for 2007

Natural gas sales for 2007 for other sectors, using this same methodology, are:

Bridgeport commercial natural gas sales	1,454.3591 million cubic feet
Bridgeport industrial natural gas sales	921.6265 million cubic feet
Total natural gas sales in 3 sectors	4,129 million cubic feet

See Table 10 for natural gas consumption calculations for other sectors in Bridgeport.

3. Community heating oil (light fuel oil)

Heating oil is supplied to customers by multiple independent petroleum companies. It is difficult to inventory all accounts. Instead, heating fuel used in Bridgeport is calculated using U.S. Census data. For Bridgeport zip codes, fuel oil use is reported by 15,597 residences in the 2000 U.S. Census (see Table 11). The Census lumps together fuel oil and kerosene. This inventory treats kerosene as a supplemental fuel, not a sole fuel, and assumes all residences, which list fuel oil/kerosene use consume fuel oil. Determining the amount of fuel oil consumption, using this method, requires input of the average volume of fuel used per customer. According to the Independent Connecticut Petroleum Association (ICPA) 682,000 heating oil customers in Connecticut used 585,000,000 gallons of heating oil per year, or roughly 800 gallons/customer.[1] Average house size is considered to be 3,000 square feet. A representative for Santa Fuel suggests 800 gallons/residence/year might be higher than the average for Bridgeport, and suggests a possible good rule of thumb to be 0.25 gallons of heating oil/square foot. Thus, a 3,000 square foot house might burn 750 gallons per year.

Using Census data on room size, this inventory estimates average residence size to be 5 rooms (see Tables 12 and 13). It assumes room size to be 15 feet X 20 feet, or 300 square feet. Using these figures, average fuel consumption per residence is:

(300 square ft/room)(5 rooms) = 1500 square feet/residence

Combining this information with the 0.25 gallons of heating oil/square foot average noted above, provides the following figure for fuel oil use per year per residence:
(0.25 gallons/square foot/year)(1500 square feet/residence) = 375 gallons/residence/year.

[1] http://www.icpa.org
[2] Santa Fuel

Citywide residential heating oil use is calculated as follows:
(375 gallons/residence)(15,597 residences) =5,848,875 gallons/year citywide fuel oil use for the year 2000. No growth factor is used to apply this figure to 2007, due to limited construction activity during this period in Bridgeport of residential structures which are small enough to use fuel oil as a likely heating source.

Since the Census does not provide information on fuel oil used for non-residential use, this method assumes all heating oil use is for residential purposes. A second method of calculating fuel oil is considered. This second method uses population data from U.S. Census and Connecticut Office of Policy and Management, and data on fuel oil consumption in Connecticut as provided by the Energy Information Administration's State Data Directory (Table 17) a methodology used by several other towns, and a methodology used in this inventory for comparison purposes in the electricity sector, and for consumption of natural gas. Of note is that this methodology provides fuel oil use for commercial and industrial sectors, as well as for the residential sector, since State Energy Data include all three sectors. This is a major difference between this methodology and the above methodology based on Census and population data for residents in Bridgeport zip codes.

Using State Energy Data, Bridgeport fuel oil use is found to be:

Bridgeport residential fuel oil consumption	21,296 thousand gallons
Bridgeport commercial fuel oil consumption	5,180 thousand gallons
Bridgeport industrial fuel oil consumption	1,658 thousand gallons
Total fuel oil consumption – 3 sectors	28,134 thousand gallons

(No adjustment made for 667 person increase in population (+0.0047%) between 2006 and 2007.)

In the residential sector, this methodology establishes fuel oil consumption, which is roughly three and a half-times more than the amount calculated using Census data specific to residents in Bridgeport zip codes. While under-reporting in Census numbers is likely, it is highly unlikely that the difference would be this great. This inventory therefore uses residential fuel oil consumption figures, as reached through US Census data (first methodology) rather than these data. State Energy Data are used for commercial and industrial sectors. With regards to industrial fuel use, the Independent Connecticut Petroleum Association (ICPA) notes most industrial and commercial buildings likely use natural gas, not heating oil, for heat, thus making Census data for oil heating fairly representative of citywide heating oil use. A representative for Santa Energy concurs that there are virtually no industrial heating oil customers in Bridgeport. Since a spot check of fuel oil use in Bridgeport industries does reveal some industrial use of #2 heating fuel for space heating purposes, often in dual fuel situations (and several industries note an eminent switch to natural gas) this inventory includes distillate heating oil data for commercial and industrial sectors. Heavy (residual) fuel oil use is not reported in a spot check of Bridgeport industrial customers. For this reason, this inventory does not include data for heavy fuel oil. It is likely that fuel use and emissions are over reported using State Energy Data methodology, as is noted in above comparisons for electricity use and for residential heating oil use, but these are the best data currently available.

4. Community transportation

Road transportation

This sector measures fuel used by on-road vehicular traffic citywide by analyzing vehicle miles travelled on Bridgeport streets. Richard Jacobson of the Connecticut Department of Transportation provided data on average weekday VMT for 2005 and 2007 based on Modeling Series 28H (Table 18). Values are multiplied by 330 to account for reduced weekend traffic flow, following standard ICLEI reporting methods, to obtain annual VMT (see Table 19). Connecticut Department of Transportation figures for percentage of heavy vehicle use on different types of roads are used to determine VMT by heavy vehicles, which are assumed to use diesel fuel, and VMT by other vehicles, which, for this inventory, are all assumed to use gasoline. See Table 21 for VMT calculations and Tables 19 and 20 for support data. In 2007, Bridgeport communitywide VMT are as follows:

Heavy vehicles VMT:	29,061,450 (diesel-fueled)
Non-heavy vehicles VMT:	475,513,500 (gasoline-fueled)
Total annual VMT	504,574,950

Rail transportation

Two railway lines run trains through Bridgeport: Metro-North commuter rail and Amtrak. Even though some trains run on diesel, this inventory assumes all trains run exclusively on electricity while running through Bridgeport, and calculates the total kilowatt-hours of electricity associated with ridership in Bridgeport as follows:

(Total line ridership)(% of passengers travelling through Bridgeport)(miles of track in Bridgeport)(Btu per passenger-mile)(kWh per Btu)

Total annual ridership is obtained from Metro-North and from Amtrak (Table 22). This inventory assumes 30% of Metro-North New Haven Line riders and 14% of Amtrak Northeast Corridor riders pass through Bridgeport. Total length of track in Bridgeport is estimated to be four miles (Table23). Energy intensity per passenger mile is obtained from the U.S. Department of Energy Transportation Energy Data Book (Table 24). It is assumed that each kWh of electricity consumed is equivalent to 3,412 Btu. See Table 25 for complete railroad energy consumption computations. 2007 railroad energy use in Bridgeport is:

Metro-North	17,879,227 kWh
Amtrak	9,352,678 kWh

Both of these are entered in the transportation sector under “electricity grid average.” Within this section, inputs are made as “rail-commuter” for Metro-North and “rail-commuter” for Amtrak. Entries are made as kWh.

Marine fuel

For the purposes of this inventory, following ICLEI recommended inventory methodology, only fuel which is **loaded** into vessels in Bridgeport is accounted for in this inventory. This methodology recognizes that not all vessels which are fueled in

Bridgeport originate in Bridgeport, and that not all marine fuel is consumed in Bridgeport waters, but it provides a means for accounting for marine fuel consumption without double counting with other communities. Local marinas and yacht clubs provided information on sales of both gasoline and diesel fuel. Mr. Frederick Hall of the Bridgeport/Port Jefferson Steamboat Company (Bridgeport Ferry) provided fuel usage for the ferries. Santa Fuel reports that barges which deliver fuel to Santa Fuel storage tanks in Black Rock Harbor do not refuel in Bridgeport. Typically they use a heavier grade fuel than what is delivered here. (Source: Tom Santa, Santa Energy). Mr. Steve Guveyan, representing the refiners and the terminal operators in Connecticut, reports that fuel is transported in by barges, which have their own fuel on board, and do not take on any fuel at Bridgeport. Heating oil is trucked out by independent trucks and gasoline is trucked out by tanker truck; fuel is not moved out by marine vessels. (Source: Mr. Steve Guveyan) See Table 26 for marine fuel figures. In 2007 the following marine fuel is loaded into vessels in Bridgeport:

Gasoline	141,300 gallons
Diesel	1,327,703 gallons

Both fuel sources are entered into the transportation sector of the inventory software. Diesel is entered in gallons under the "marine" vehicle category. Since there is no such vehicle category for gasoline, the marine gasoline is entered in the "passenger vehicle" category.

5. Community Solid Waste

This sector inventories municipal solid waste from citywide sources. Solid waste collected in Bridgeport either goes to the Bridgeport Transfer Station, where it is sorted and then hauled to the Wheelabrator incineration facility, located in Bridgeport, or goes directly to the Wheelabrator facility. Mr. Frank Feraro of Wheelabrator provided data on volume of solid waste hauled to the Wheelabrator facility (see Table 27). Incineration results in the creation of ash, which is trucked to the Wheelabrator Putnam Ash Residue Landfill in Putnam, Connecticut. Ash represents 30% of the original solid waste by weight. Emissions created as a result of ash landfilling are not included in this inventory.

In 2007, Bridgeport created 63,080.53 tons of solid waste. The exact composition of Bridgeport's solid waste is not known, so this inventory uses the following characterization, as recommended by ICLEI: 38% paper, 13% food waste, 10% plant debris, 4% wood and textiles, and 35% all other, to give the following tonnage:

23,970.50 tons paper
8,200.43 tons food waste
6,308.00 tons plant waste
2,523.21 tons wood and textiles
22,078.09 tons all other

This corresponds closely with Wheelabrator estimates that two-thirds of all emissions (derived from solid waste from many municipalities, not just Bridgeport) are biomass-

based and one-third of emissions are fossil-based. Emissions from biogenic sources (paper, plant waste and food waste) are considered informational items since incineration of these materials is believed to create no net CO2 emissions.

The Wheelabrator facility processes up to 2,250 tons of solid waste per day, and generates 67MW of electricity through waste processing. Metal byproducts are removed and recycled. Wheelabrator reports that 8 MW of this are used to run the operations at the Wheelabrator facility and 59 to 60 MW are sold to United Illuminating Company and are fed into the wires for use by the general electrical grid. On a life cycle basis, every ton of trash incinerated is estimated to result in a net avoidance of emissions of 1 ton CO_2e. The Wheelabrator plant does not have any SF6's reported to be in use at the Wheelabrator facility[1].

6. Other

This sector inventories other sources of greenhouse gas emissions, which do not fall into any of the above categories. Within the City of Bridgeport, there is one such operation: the closed landfill known as the Seaside Landfill. Seaside Landfill was closed and capped six to seven years ago. The amount and composition of solid waste deposited is unknown. The facility is fully capped with soil. DEP is not monitoring this site.[2] Methane emissions through the soil cap are likely, but lack of information on the site makes it impossible to determine with any accuracy how much is being emitted, and for how long emissions will continue.

[1] Mr. Frank Feraro, Wheelabrator, personal communication
[2] Mr. David McKeegan, Connecticut DEP, Solid Waste Engineering Enforcement

E. Municipal inventory

The municipal inventory calculates greenhouse gas emissions resulting directly from government operations or from activities over which the government of the City of Bridgeport has control. Included in this are greenhouse gas emissions resulting from building operations, city-operated vehicles, streetlights and traffic lights, water and sewage treatment, and solid waste from municipal operations. An optional component of the municipal inventory is calculation of greenhouse gas emissions resulting from employee commute. This component is included in this inventory. Two facilities – Sikorsky Memorial Airport in Stratford, CT. and Fairchild Wheeler Golf Course in Fairfield, CT. - are owned by the City of Bridgeport. Emissions from each of these facilities are included in this inventory since Bridgeport has control over fuel and energy use at the facilities. The Water Pollution Control Authority (WPCA), responsible for water and sewage treatment for Bridgeport, is operated by an independent company, but is made a part of the municipal inventory. Some water treated at WPCA facilities comes from neighboring towns. Emissions for all water treatment operations (regardless of town of origin of water) are included in this inventory of Bridgeport municipal greenhouse gases.

1. Building sector

This sector inventories all fuel and electricity used by buildings owned and/or operated by the City of Bridgeport. Electricity and natural gas are the two fuels used by Bridgeport City buildings. John Cottell, Public Facilities, City of Bridgeport, provided data on kilowatt-hours of electricity purchased in FY06, FY07 and FY08, along with cost of electricity purchased for all municipal buildings, excluding Board of Education buildings, for FY08. In some cases, electricity billed to a building also includes outside lighting, such as parking lot lighting, and is so noted.

Up until November 2007, Bridgeport purchased electricity solely through United Illuminating Company. In December 2007 the City of Bridgeport entered into a contract to purchase 4,200 MWH, an amount deemed to be the equivalent of 20% of its electricity (this does not include WPCA electricity use), as “green power,” from Constellation NewEnergy. Also in December 2007, the Bridgeport Board of Education entered into a contract to purchase 4,700 MWh, an amount deemed to be the equivalent of 20% of its electricity, as “green power” from Constellation NewEnergy. While Bridgeport began purchasing electricity generation from Constellation NewEnergy in December 2007, Bridgeport continued to purchase electricity distribution from UI. This inventory uses the number of kWh distributed by UI as the total number of kWh used by Bridgeport buildings for time periods both before and after the switch to Constellation NewEnergy. For the time period prior to December 2007, this inventory uses UI electricity costs. For the time period after December 2007, this inventory uses costs which represent the combination of charges from UI and Constellation. Tables 29 and 30 provide municipal electricity data.

John Cottell also provided data on natural gas usage (CCF) and costs of natural gas usage for all municipal buildings, except Board of Education buildings and the Airport for FY08 (see Table 30). Mr. Tom Fava provided costs for electricity and costs for natural

gas for Board of Education buildings for FY 08 (table 30). Kilowatt-hours of electricity were calculated by multiplying electricity cost by the average price per kilowatt hour of electricity for other municipal buildings, as calculated from cost and usage data provided by John Cottell. A similar method was used to determine CCF of natural gas usage for Board of Education Buildings, namely, multiplying natural gas costs for Board of Education buildings by average cost of gas for other municipal buildings, as calculated from cost and usage data provided by John Cottell. Cost factors used were: $0.2353/kWh for electricity, and $1.7875/CCF natural gas. Airport natural gas use was provided by Paula Gaydos (Table 30).

2. Vehicle fleet

This sector inventories emissions which are a direct result of vehicle operation by the City of Bridgeport. Vehicles include motor vehicles, marine vehicles, and miscellaneous lawn maintenance equipment. Fernanda Oliveira, Bridgeport Public Facilities, provided a list of vehicles and lawn maintenance equipment owned by the City of Bridgeport, departments responsible for operation, and list of fuel purchased on a monthly basis by each City department for calendar years 2005, 2006, and 2007, and for the period 1/08 through 5/08. Fire Department Fuel was provided for the following fiscal years: FY 05, FY 06, FY07 and FY 08. Airport Fuel was provided for the following complete calendar years: 2005, 2006 and 2007.

For this inventory, for all departments except the Fire Department and Airport, gallons of fuel used by the City of Bridgeport for the time period of FY 08 are calculated by adding fuel purchased from July 1, 2007 to December 31, 2007 (the first half of FY 08) with gallons of fuel purchased in the five months from January 1, 2008 to May 31, 2008, pro-rated to six months, to represent the second half of FY 08. Gallons of fuel used in FY 08 by the Fire Department are input as reported for the 2007 inventory. Airport fuel purchased in calendar year 2007 is input into the 2007 inventory year. Mr. Peter Harris, Director of Finance, WPCA, provided costs of fuel purchased by WPCA for FY 08. Gallons of fuel used by WPCA are calculated from the costs provided by multiplying by the average cost per gallon of fuel purchased by other municipal departments during the same FY08 time period, namely by $3.02/gallon for diesel, and $2.62/gallon for unleaded gasoline. Fuel costs for WPCA are recouped from the independent WPCA operating company. Mr. Harris also provided gallons of fuel used by WPCA in FY 06.

In addition to fuel used for the vehicle fleet (as provided by Fernanda Oliviera) this inventory includes fuel believed to be used for operation of lawn/maintenance equipment by the Parks Department and by Fairchild Wheeler Golf Course personnel. This additional fuel information was provided by Steve Hladun, Parks and Recreation Department, City of Bridgeport. See Tables 31-36 for data on municipal fuel purchases. Total municipal fuel is shown in table 37. See Tables 38-42 for municipal fleet. Fuel used by the municipal fleet is not matched to specific vehicles. Instead, the software's default vehicle mix is used for this analysis. Vehicle type does not effect CO_2e resulting from fossil fuel combustion, and a spot check of vehicles reveals that several vehicles attributed to one department are being operated by personnel from another department, and several vehicles are not the same vehicle as as listed with its license plate number.

Vehicle type does effect criteria air pollutant output, but criteria air pollutants are not analyzed in this inventory, even though the CACP software allows for it. Fuel used to operate lawn/maintenance equipment is also input under the software's passenger vehicle default category. No accommodation is made for oil, which is mixed with gasoline, to fuel two-cycle engine equipment.

3. Street lights

Bridgeport has approximately 1,300 Black Decorator (Deco) street lights and 11,300 other street lights. John Cottell, Public Facilities, City of Bridgeport, provided total kWh of electricity purchased for street lighting and the related cost of purchase for FY 08. Background data for FY 04, FY 06 and FY 07 were also provided (see Tables 43-45).

4. Traffic lights

This sector measures the electricity used to power traffic lights within the City of Bridgeport. There are 174 Traffic lights in the city which are owned by the State of Connecticut, but for which Bridgeport pays electrical costs. John Cottell, Public Facilities, City of Bridgeport, provided kWh of electricity used and cost of electricity to power these lights for FY 08, as well as background data for FY 06 and FY 07 (see Table 46).

5. Water and sewer

This sector inventories all fuel and electricity used to operate water and sewage treatment for the City of Bridgeport. The Water Pollution Control Authority (WPCA) operates the following:

Eastside Wastewater Treatment Plant – 10 mgd activated sludge treatment plant
Westside Wastewater Treatment Plant – 30 mgd activated sludge treatment plant
10 sewage pump stations (7 dry well/wet well stations, 2 pneumatic ejector stations, and 1 submersible station)

WPCA is responsible for water and sewage treatment for Bridgeport, as well as small sections of surrounding towns, namely all of Trumbull that is on sewers, about thirty-five houses in Fairfield, most of the campus for Sacred Heart University (approximately 32,000 CCF per year), and a small amount of Stratford, including several garden apartment type buildings (flow is approximately 50,000 CCF per year). Total service area is approximately 20.3 miles and includes approximately 283 miles of sewers, of which 133 miles are combined sanitary storm. This inventory calculates emissions from **all** flow and **all** treatment done by WPCA, regardless of town or city of origin. Natural gas is used to heat the WPCA buildings during the heating season (approximately October to April) and electricity is used year-round to run pumping and treatment operations. Peter Harris, Director of Finance for WPCA for the City of Bridgeport, provided figures for electricity and natural gas used to run the waste water treatment plants and pumping stations operated by WPCA for calendar year 2005 and FY 08 (see Tables 47 and 48).

6. Solid waste
This sector inventories all solid waste which results directly from municipal government operations. In collecting solid waste, no differentiation is made between solid waste generated from government operations and solid waste generated by other customers, which is to say, municipal solid waste is picked up and hauled together with solid waste from other sources. Therefore, an accurate field number for municipal solid waste does not exist. No inputs are made for this sector.

7. Employee Commute
This sector inventories fuel used by City of Bridgeport employees to commute between home and work. Janet Finch, Payroll Department, City of Bridgeport, supplied a list of zip codes from which City and Board of Education employees commuted to work, and number of employees commuting from each zip code. MapQuest is used to determine mileage from each zip code to City Hall Annex at 999 Broad Street, even though it is known that not all employees work at 999 Broad Street. It is assumed that 1,220 of 4,250 employees (28.7% of total employees) commute 190 days per year (teaching staff) and the remaining 71.3% commute to work 240 days per year. All commutes are considered to have been made with gasoline-powered vehicles, and data are entered as gasoline fuel (as opposed to diesel or alternate fuels). Data are entered in the passenger vehicle category of the software. This inventory assumes that no trips are made by mass transportation or carpool, and therefore represents the greatest amount of emissions possible for this sector. See Tables 49-50 for employee commute information.

8. Other
No data was input in this sector.

VIII. A. Contact information community inventory

Electricity
United Illuminating Company
Mr. Garrett Sheehan
203.499.2461 office
203.395.9585 cell
Garrett.Sheehan@uinet.com

Natural Gas
Southern Connecticut Gas Company (SCGC)
Mr. Brian Early
Cell phone: 203.339.0099
800.659.8299
203.382.7677
bearly@soconngas.com

Heating oil
Independent Connecticut Petroleum Association
Mr. Chris Herb
Phone: 860.613.2041

Heating oil
Santa Energy
Mr.Tom Santa
203.362.3332 ext. 1326

Heating oil
Mr. Steve Guveyan
Refiners and terminal operators in CT
860.246.8846

Municipal solid waste
Wheelabrator
Frank Feraro
603.929.3305
800.682.0026
fferaro@wm.com

Transportation
Greater Bridgeport Regional Planning Agency
Mark Nielson, Acting Director and Sr. Transportation Planner
203.366.5405

Contact information community inventory, continued

Transportation
Connecticut Department of Transportation
Elizabeth Lagash, Traffic disseminator
860.594.2093

Transportation – Bridgeport VMT
Mr. Richard C. Jacobson
Transportation Planner
Connecticut Department of Transportation
860.594.2028
Richard.Jacobson@po.state.ct.us

Rail transportation
Mr. Mark Foran
New Haven Office of Rail; Operations
203.789.7189 ext. 130
j.mark.foran@po.state.ct.us

Marine fuel
Bridgeport/Port Jefferson Steamboat Co. (Ferry)
Frederick Hall, Vice-President and General Manager
Phone: 888.443.3779
Phone: 631.476.8000

Marine fuel
Black Rock Yacht Club
203.335.0587

Marine fuel
Dolphin's Cove Marina
203.335.3301

Marine fuel
Cedar Marina
203.335.6263
203.335.6262

Marine fuel
Captain's Cove
Jan Williams & Bruce Williams
203.335.1433

Contact information community inventory, continued

Marine fuel
Pequonnock Yacht Club
203.334.4991

Marine fuel
Miamoque Yacht Club
203.334.9882

Marine fuel
Fayerweather Yacht Club
203.576.6796

Marine fuel
Inland Fuel Terminal
203.367.1622

Seaside Landfill
Mr. David McKeegan
Connecticut Department of Environmental Protection
Solid waste engineering enforcement
860.424.3310

VIII. B. Contact information municipal inventory

Public Facilities
City of Bridgeport
Mr. Ted Grabarz
203.394.6983
Ted.grabarz@bridgeportct.gov

Public Facilities, gas and electricity
Public Facilities
City of Bridgeport
Mr. John Cottell
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WPCA gas, electricity and vehicle fuel
Water Pollution Control Authority (WPCA)
Peter Harris, Director of Finance
Phone: 203.332.5604
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Board of Education facilities electricity and natural gas
Bridgeport Board of Education
Thomas Fava
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Municipal Fleet and Fleet Fuel
City of Bridgeport
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Airport vehicle and facilities fuel and electricity
City of Bridgeport
Paula Gaydos
Accounting
Sikorsky Memorial Airport
203.576.8026
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Bridgeport Solid Waste
Bridgeport Transfer Station
Paul Albaquerque
203.576.7753

Contact information municipal inventory, continued

Bridgeport Recycling Program
Bridgeport Transfer Station
Armindo Videira
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Seaside Landfill
City Planning OPED
City of Bridgeport
Mr. Michael Nidoh
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Bridgeport Employee Commute
Bridgeport Payroll
City of Bridgeport
Janet Finch
Janet.Finch@bridgeportct.gov

IX. Tables

Bridgeport, Connecticut greenhouse gas emissions inventory

List of Tables – Community (Citywide) inventory

Bridgeport, Connecticut greenhouse gas emissions inventory

List of Tables – Municipal (Governmental operations) inventory

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Table 1
Electricity coefficients used in this inventory

This inventory uses an EGrid emissions coefficient for electricity generation, specifically emissions for Egrid Subregion 1 – NPCC New England. Former inventories for many municipalities have used emissions coefficients for NERC regions (Bridgeport is in NERC Region 7) but ICLEI is changing its electricity emissions protocol to include the use of EGrid emissions coefficients as the new and preferred method. This will put emissions accounting in line with the protocol of the Climate Registry as well. EGrid regions are based on US EPA regions. The U.S. EPA has only released emissions coefficients for years up to 2004. This inventory, therefore, uses 2004 data for years after 2004, per recommendation of ICLEI.

Accordingly, the following emissions coefficients were input into all inventory years (2005, 2006 and 2007):

CO2	980.9 lbs/MWH
N20	0.015 lbs/MWH
CH4	0.080 lbs/MWH

No changes were made to the criteria air pollutants. The coefficients for these remain as follows:

NOX	0.677 lbs/MWH
SOX	1.262 lbs/MWH
CO	1.216 lbs/MWH
VOC	0.136 lbs/MWH
PM10	0.982 lbs/MWH

Table 2
Bridgeport community electricity reported by UI for 6/01/7-5/31/08

Sector	**kWh**
Industrial	68,432,951
Commercial	308,797,296
Municipal	52,581,600
State	2,191,674
Residential	330,415,655
Total electricity	**762,419,176**

Table 3
Bridgeport population data used for estimating municipal electricity and natural gas use

Bridgeport Population	1990 Census	141,686
	1995 Projected	138,010
	2000 Projected	137,860
	2005 Projected	139,880
	2010 Projected	142,560
	2015 Projected	146,720
	2020 Projected	151,120

Source: Connecticut Population Projection Series 95.1, Office of Policy and Management, September 1995
http://www.ct.gov.opm/cwp/view.asp?a=2993&q=383326

Linear regression using 2000 to 2020 data yields the following:
Bridgeport population = 666.2(year) + 136.956
$R^2 = 0.9749$ r = 0.9874

Using the above equation:
Bridgeport 2005 population = 666.2(5) + 136.956 = 140,292 (slightly over Series projection)
Bridgeport 2006 population = 666.2(6) + 136.956 = 140,960
Bridgeport 2007 population = 666.2(7) + 136.956 = 141,627

Table 4
Connecticut Population Estimates

4/1/00 Census	3,405,565
4/1/00 Estimates base	3,405,602
7/1/01 Estimate	3,411,990
7/1/01 Estimate	3,429,770
7/1/02 Estimate	3,451,867
7/1/03 Estimate	3,472,964
7/1/04 Estimate	3,481,890
7/1/05 Estimate	3,486,490
7/1/06 Estimate	3,495,753
7/1/07 Estimate	3,502,309

Source: U.S. Census
Http://www.census.gov/main/www/cen2000.html

Table 5
Bridgeport Population as Percentage of Connecticut Population

Using Bridgeport Population Estimates calculated from information in Table 3, from State of Connecticut Office of Policy and Management, Connecticut Population Series 95.1, and Connecticut population estimates from the US Census 2000 population estimates in Table 4, the following are established:

Bridgeport Population 2005 / Connecticut Population 2005	=	140,292 / 3,486,490	=	0.0402387501 = 0.0402
Bridgeport Population 2006 / Connecticut Population 2006	=	140,960 / 3,495,753	=	0.043232151 = 0.4323
Bridgeport Population 2007 / Connecticut Population 2007	=	141,627 / 3,502,309	=	0.04381795 = 0.4043

Table 6
Connecticut electricity consumption by sector

	Residential MWh	Commercial MWh	Industrial MWh	Transportation Mwh	Total Sales MWh
2005	13,802,962 41.7%	13,949,347 42.1%	5,125,936 15.6%	189,784 0.57%	33,095,029
2006	12,963,468 40.9%	13,611,036 43%	4,925,981 15.6%	176,968 .5%	31,677,453
2007	13,379,000 39.2%	15,094,000 44.2%	5, 450,000 16%	200,000 .5%	34,123,000

Source: 2005 and 2006 figures: Energy Information Administration State Data Directory, State Historical Tables from 2006; Released October 26, 2007, Retail Sales of Electricity by State by Sector By Provider, 1990 – 2006, http://tonto.eia.doe.gov/state/sep_moreconsump.cfm

Source: 2007 figures: Electric Power Monthly, March 2008, With Data for December 2007 (DOI/EIA_0226 (2008/03), Energy Information Administration; Office of Coal, Nuclear, Electric and alternate Fuels; U.S. Department of Energy, Washington, D.C., Table 5.4.B Retail Sales of Electricity to Ultimate Customers By End-Use Sector, By State, Year-To-Date Through December 2007 and 2006 (on the report, says it is available at: http://www.eia.doe.gov/cneaf/electricity/epm/epm_sum.html

Table 7
Bridgeport electricity consumption by sector

Calculated from state energy use data and population data (Table 5 and Table 6) using the following formula:

$$\frac{\text{200x Bridgeport population}^{1}}{\text{200x Connecticut population}} \times (\text{200x Connecticut electricity consumption by sector}^{2})$$

2005	
Bridgeport Residential electricity sales	555,414,000 kWh
Bridgeport Commercial electricity	561,304,000 kWh
Bridgeport Industrial electricity sales	206,261,000 kWh
Bridgeport Transportation electricity sales	7,637,000 kWh
Bridgeport Total electricity sales	1,331,703,000 kWh
2006	
Bridgeport Residential electricity sales	522,729,000 kWh
Bridgeport Commercial electricity	548,841,000 kWh
Bridgeport Industrial electricity sales	198,631,000 kWh
Bridgeport Transportation electricity sales	7,136,000 kWh
Bridgeport Total electricity sales	1,277,337,000 kWh
2007	
Bridgeport Residential electricity sales 2007	541,022,000 kWh
Bridgeport Commercial electricity sales 2007	610,374,000 kWh
Bridgeport Industrial electricity sales 2007	220,388,000 kWh
Bridgeport Transportation electricity sales 2007	8,088,000 kWh
Bridgeport Total electricity sales 2007	1,379,872,000 kWh

[1]From Table 5
[2]From Table 6

Table 8 (awaiting data)
Bridgeport natural gas consumption reported by SCGC

Table 9
Connecticut natural gas consumption by sector

Year	Residential million cf	Commercial million cf	Industrial million cf	Total sales for three sectors million cf
2005	44,522	35,756	20,469	100,756
2006	39,069	32,660	21,670	93,399
2007	43,360	35,965	22,791	102,116

Source: U.S EPA, Energy Information Administration online at
http://tonto.eia.doe.gov/dnav/ng/ng_cons_sum_dcu_SCT_a.htm

Table 10
Bridgeport natural gas consumption by sector

Calculated from state energy use data and population data (Table5 and Table 9) using the following formula:

$$\frac{\text{200x Bridgeport population}^{1}}{\text{200x Connecticut population}} \times (\text{200x Connecticut natural gas consumption by sector}^{2})$$

2005	
Bridgeport residential natural gas sales	1,791.5096 million cubic feet
Bridgeport commercial natural gas sales	1,438.7767 million cubic feet
Bridgeport industrial natural gas sales	823.6469 million cubic feet
Total natural gas sales in 3 sectors	**4,055 million cubic feet**
2007	
Bridgeport residential natural gas sales	1,753.3995 million cubic feet
Bridgeport commercial natural gas sales	1,454.3591 million cubic feet
Bridgeport industrial natural gas sales	921.6265 million cubic feet
Total natural gas sales in 3 sectors	**4,129 million cubic feet**

[1]From Table 5
[2]From Table 9

Table 11
Residential heating fuel data from Census 2000

	Number of residences using different fuel types			
Zip Code	**Gas**	**Bottled Gas**	**Electricity**	**Fuel Oil**
06602	No residential Census data for this zip code			
06604	5,785	305	1,618	2,931
06605	5,060	229	1,174	2,085
06606	7,107	393	1,630	6,315
06607	1,842	81	110	577
06608	2,992	125	259	747
06610	4,279	143	969	2,942
Total	**27,065**	**1,276**	**5,760**	**15,597**

Source: US Census 2000 online at http://factfinder.census.gov/home/saff/main.html?

Table 12
Bridgeport residential unit size

Zip code	Number of units	Mean # rooms
06604	11,799	4.2
06605	9,381	4.6
06606	16,302	5.2
06607	3,054	4.7
06608	4,729	4.6
06610	9,093	4.6
Total	**54,358**	

Source: US Census 2000 online at http://factfinder.census.gov/home/saff/main.html?

Total of fuel types (Table 11) and total of residences (Table 12) not equal; some list "other" or "none" as fuel type.

Table 13
Bridgeport residential unit size – weighted average

A weighted average of residential unit size is achieved as follows:

(11,799)(4.2) =	49,555.8
(9,381)(4.6) =	43,152.6
(16,302)(5.2) =	84,770.4
(3,054)(4.7) =	14,353.8
(4,729)(4.6) =	21,753.4
(9,093)(4.6) =	41,827.8
Total	255,413.8

Average number of rooms = $\frac{\text{255,413.8 total number of rooms}}{\text{54,358 total number of residences}}$ =

4.6987 average number of rooms/residential unit. Since the Census does not include bathrooms, laundry areas, etc., this inventory uses 5 rooms/residential unit to allow for heating of space omitted from Census data.

Table 14
Heating degree days and cooling degree days for Coastal Connecticut

Year	Heating degree days	Cooling degree days
1988	5588	866
1989	5679	700
1990	4714	777
1991	4769	854
1992	5659	458
1993	5656	761
1994	7881	775
1995	5600	771
1996	5805	560
1997	5621	528
1998	4841	705
1999	5239	884
2000	5682	511
2001	5049	774
2002	5033	833
2003	5759	752
2004	5516	655
2005	5539	821
2006	4993	695
2007	5432	689

The average heating degree days for the twenty year period 1988-2007 was 5502.75.
The average cooling degree days for the twenty year period 1988-2007 was 718.54.

Source: National Climate Data Center
http://wwwncdc.noaa.gov/oa/documentlibrary/hcs/hcs.html

Table 15
Connecticut distillate fuel oil consumption 2006

Sector	Thousand gallons	
Residential	525,807	485,461 adjusted
Commercial	111,141	102,461 adjusted
Industrial	14,669	13,543 adjusted

Source: Energy Information Administration State Energy Data, online at
http://tonto.eia.doe.gov/dnav/pet_cons_821rsd_dcd_sCT_a.htm

Table 16
Connecticut residual fuel oil consumption 2006

Sector	Thousand gallons	
Residential	0	
Commercial	12,676	13,247 adjusted
Industrial	23,211	24,256 adjusted

Source: Energy Information Administration State Energy Data, online at
http://tonto.eia.doe.gov/dnav/pet_cons_821rsd_dcd_sCT_a.htm

Table 17
Bridgeport Fuel Oil consumption

Calculated from state energy use data and population data (Tables 5, 15 and 16) using the following formula and *adjusted* consumption data:

$$\frac{\text{200x Bridgeport population}}{\text{200x Connecticut population}} \times (\text{200x Connecticut fuel oil consumption by sector})$$

2006

Bridgeport residential fuel oil consumption[1]	19,575.3583 thousand gallons
Bridgeport commercial fuel oil consumption	4,137.6861[1] thousand gallons
	534.1371[2] thousand gallons
Total	4,671.8477 thousand gallons
Bridgeport industrial fuel oil consumption	546.0973[1] thousand gallons
	978.0800[2] thousand gallons
Total	1,524.1773 thousand gallons

2007

$$\frac{\text{2007 heating degree days}^{3}}{\text{2006 heating degree days}} = \frac{5{,}432}{4993} = (1.0879)(\text{2006 fuel oil use}) = \text{2007 fuel oil use}$$

Bridgeport residential fuel oil consumption	21,296.0323 thousand gallons
Bridgeport commercial fuel oil consumption	5,180.4141 thousand gallons
Bridgeport industrial fuel oil consumption	1,658.1525 thousand gallons
Total fuel oil consumption – 3 sectors	**28,134 thousand gallons**

[1] Distillate fuel oil
[2] Residual fuel oil
[3] Heating degree days from Table 14

Distillate Fuel Oil: A general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as No. 1, No. 2, and No. 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as No. 1, No. 2, and No. 4 fuel oils are used primarily for space heating and electric power generation.
Residual Fuel Oils: The topped crude of refinery operations, which includes No. 5 and No. 6 fuel oils, as defined in ASTM Specification D 396 and Federal Specification, VV-F-815C; Navy Special fuel oil as defined in Military Specification MIL-F-859E including Amendment 2 (NATO symbol F-77); and Bunker C fuel oil. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes.
Definitions from: EIA online at http://tonto.eia.doe.gov/dnav/pet/TblDefs/pet_cons_821dst_tbldef2.asp

Table 18
VMT for the City of Bridgeport

2005 Average weekday			**2007 Average weekday**		
47 1E	775,667	52%	47 1E	787,361	51%
47 2A/C	578,731	38%	47 2A/C	592,305	39%
47 3L	104,831	7%	47 3L	107,909	7%
47 4R	40,825	3%	47 4R	41,440	3%
Total	1,500,054	100%	**Total**	1,529,015	100%

Summer 2005		Summer 2007	
47 1E	833,933	47 1E	845,595
47 2A/C	636,425	47 2A/C	650,640
47 3L	115,122	47 3L	118,607
47 4R	43,891	47 4R	44,505
Total	1,629,371	**Total**	1,659,347

Winter 2005		Winter 2007	
47 1E	731,658	47 1E	741,890
47 2A/C	590,966	47 2A/C	604,165
47 3L	106,899	47 3L	110,135
47 4R	38,508	47 4R	39,047
Total	1,468,031	**Total**	1,495,237

Annual VMT for City of Bridgeport

2005 Annual VMT City of Bridgeport (from Table 18)
(1,500,054 Avg Wkday VMT)(330 days/year)[1] = **495,017,820 Annual VMT**

2007 Annual VMT City of Bridgeport (from Table 18)
(1,529,015 Avg Wkday VMT)(330 days/year) = **504,574,950 Annual VMT**

[1]330 is a standard multiplier recommended by ICLEI to account for lower VMT on weekends

VMT is Average Weekday
47 = Bridgeport
E = Expressway
A/C = Arterial/Collector
L = Local
R = Ramp

Source: Richard Jacobson, Connecticut Department of Transportation, Modeling Series 28H
August 1, 2008

Table 19
Bridgeport roads-mileage per road type

	State	Town	Total
Interstate	3.78	0.00	3.78
Part express	4.32	0.00	4.32
Part other	4.73	3.20	7.93
Minor arterial	12.39	36.16	48.55
Collector	0.00	35.61	35.61
Local	0.00	185.80	185.80
Total	25.22	260.77	285.99

Source: Richard Jacobson, Connecticut Department of Transportation

Table 20
Statewide average percentage of heavy vehicles by functional class 7/16/2008

Functional Class	% Heavy vehicles 2005	% Heavy vehicles 2007
Interstate	11.50	11.62
Other Freeway/expressway	4.76	5.35
Other Principal/Arterial	4.14	3.94
Minor Arterial	2.29	2.43
Major Collector	3.75	2.14
Local Usage	2.24	2.99

Source: Elizabeth Lagosh, Connecticut Department of Transportation

Table 21
Bridgeport 2007 VMT-percent attributed to heavy and non-heavy vehicles

From Tables 18, 19 and 20 vehicle miles travelled by heavy and non-heavy vehicles is determined. Heavy vehicles are assumed to use diesel; non-heavy vehicles are assumed to use gasoline.

Expressway VMT = 787,361/day
% Heavy vehicles uses the average of heavy vehicles on interstates and on other freeway/expressway classifications = (11.62% + 5.35%)/2 = 8.485%
Heavy vehicles on Expressway = (787,361)(8.49%) = 66,808 vehicles
Non-heavy vehicles on Expressway = (787,361)(91.515%) = 720,553 vehicles

Arterial/Collector VMT = 592,305/day
% heavy vehicles uses the average of heavy vehicles on other principal/arterial, minor arterial, and major collector classifications = (3.94% + 2.43% + 2.14%)/3 = 2.84%
Heavy vehicles on Arterial/Collectors = (592,305)(2.84%) = 16,821 vehicles
Non-heavy vehicles on Arterial/Collectors = (592,305)(97.16%) = 575,484 vehicles

Local roads VMT = 107,909/day
% heavy vehicles = 2.99%
Heavy vehicles on local roads = (107,909)(2.99%) = 3,226 vehicles
Non-heavy vehicles on local roads = (107,909)(97.01%) = 104,683 vehicles

Ramp VMT = 41,440/day
% heavy vehicles uses the average of heavy vehicles on arterial/collector roads and local roads = (2.84% + 2.99%)/2 = 2.92%
Heavy vehicles on ramps = (41,440)(2.92%) = 1,210 vehicles
Non-heavy vehicles on ramps = (41,440)(97.08%) =40,230 vehicles

Total VMT by heavy vehicles = 88,065/day
Total VMT by non-heavy vehicles = 1,440,950

Multiplying each of these numbers by 330 (a standard ICLEI factor) provides Annual VMT as follows:

Heavy vehicles:	**29,061,450**
Non-heavy vehicles:	**475,513,500**
Total annual VMT	**504,574,950**

VMT by Road Classification
51% of 2007 Average Daily VMT is attributed to Expressway Driving (see Table 18)

Table 22
Train ridership on lines passing through Bridgeport

Amtrak Ridership in the Northeast Corridor			
	FY 05	FY 06	FY 07
Northeast Total[1]	9,476,923	9,431,279	10,035,012
Percent change			+ 6.4%
Metro-North Ridership			
	2005	2006[3]	2007
New Haven Line[2]	33,878,000	35,011,480	36,360,339
Percent change			+ 3.9%

[1] "Annual Amtrak Ridership of 25.4 Million Marks Third Straight Year of Record Increases," News Release, National Railroad Passenger Corporation, October 23,2007; online at http://www.amtrak.com/servlet/ContentServer?pagename=Amtrack/...
[2] Governor Rell: Connecticut Rail Ridership Shows Strong Increase in 2007", press release, online at http://www.ct.gov/governorrell/cwp/view.asp?Q=412816&A=3293
[3] 2006 ridership revised to simulate the 2006 calendar

Table 23
Miles of railroad track in Bridgeport

Miles of track reported on Metro-North timetable[1]:
Fairfield to Bridgeport: 4
Assume ½ of track miles are in Fairfield and ½ of track miles are in Bridgeport
Track miles in Bridgeport = 2
Miles of track reported on Metro-North timetable:
Bridgeport to Stratford: 4
Assume ½ of track miles are in Bridgeport and ½ of track miles are in Stratford
Track miles in Bridgeport = 2

Assume total track miles in Bridgeport equals 4

[1] Metro-North Railroad New Haven Line, April 6, 2008 through October 4, 2008

Table 24
Energy intensity for Amtrak and commuter rail line (Metro-North)

2005 energy intensity for Amtrak rail operations: 2,709 Btu/revenue passenger-mile[1].
2005 energy intensity for commuter rail operations: 2,996 Btu/passenger-mile[2]

2006 energy intensity for Amtrak rail operations: 2,650 Btu/revenue passenger-mile[3]
2006 energy intensity for commuter rail operations: same coefficient listed as for 2005 (2,996 Btu/passenger-mile)[4]

[1]Source: U.S. Department of Energy; Energy Efficiency and Renewable Energy, American Public Transportation Association, Transportation Energy Data Book, 2007 Public Transportation Fact Book, Edition 26-2007; Table 9.10 Summary Statistics for the National Railroad Passenger Corporation (Amtrak), 1971 – 2005 http://cta.ornl/.gov/data/index/shtml
[2]Source: U.S. Department of Energy; Energy Efficiency and Renewable Energy, American Public Transportation Association ,Transportation Energy Data Book, 2007 Public Transportation Fact Book, Edition 26-2007; Table 9-11 Summary Statistics for Commuter Rail Operations 1984-2005. http://cta.ornl/.gov/data/index/shtml
[3]Source: U.S. Department of Energy; Energy Efficiency and Renewable Energy, American Public Transportation Association, Transportation Energy Data Book, 2007 Public Transportation Fact Book, Edition 27-2008; Table 9.10 1971-2006 http://cta.ornl/.gov/data/index/shtml
[4] Source: U.S. Department of Energy; Energy Efficiency and Renewable Energy, American Public Transportation Association, Transportation Energy Data Book, 2007 Public Transportation Fact Book, Edition 27-2008; Table 9.11 Summary Statistics for Commuter Rail Operations 1984-2005 Does not have a new number for 2006; still has 2005 number of 2,996 Btu/revenue passenger-mile http://cta.ornl/.gov/data/index/shtml

Table 25
Railroad emissions for Bridgeport – worksheet

Metro-North operates 99 trains through and/or to Bridgeport per day on weekdays and approximately 34 trains per day on weekends. In 2001, Bridgeport westbound boardings are estimated at 2,546 out of 52,596 or 4.8% of total.[1] Boardings at the three stations east of Bridgeport equal 9.5% of ridership (2,918 in New Haven, 1,113 in Milford, and 972 in Stratford for a total of 5,005 out of 52,595). The Town of Westport assumes 20% of all Metro-North ridership passes through Westport.[2] This inventory assumes 14% of all New Haven line riders pass through Bridgeport (9.5% +4.8% = 14.3%, rounded down to 14% to account for riders who start in Bridgeport or end journey in Bridgeport, and do not travel the full length of Bridgeport track. (Waterbury line travelers going west of Bridgeport travel the entire length of Bridgeport track.)

Amtrak operates 46 trains in Connecticut per day.
For Fiscal Year 2006, Bridgeport has 62,374 boardings and alightings out of CT total station usage of 1,454,616, which equals 4.3%.[3]
For Fiscal Year 2007, Bridgeport has 66,292 boardings and alightings out of CT total station usage of 1,528,199, which equals 4.3%.[4]
Station activity in Bridgeport is relatively small. Activity on either side of Bridgeport, at New Haven and Stamford stations, is larger. This inventory assumes that most riders, who are on the train in New Haven or Stamford, remain on the train through Bridgeport. In its inventory, the Town of Westport, CT, also located between New Haven and Stamford, estimates 30% of Amtrak Northeast corridor ridership passes through Westport.[2] This inventory uses the same estimate of all Amtrak passengers riding through Bridgeport for calculating energy used for Amtrak ridership.

The following is calculated from information from Tables 22-24

Metro-North railroad 2006 electricity use
(35,011,480 total New Haven line passengers)(14% ridership through Bridgeport)(4 miles of track in Bridgeport)(2,996 Btu/passenger-mile)(3,412 Btu/kWh) = 17,215,962 kwh

Metro-North railroad 2007 electricity use
(36,360,339 total New Haven line passengers)(14% ridership through Bridgeport)(4 miles of track in Bridgeport)(2,996 Btu/passenger-mile)(3,412 Btu/kWh) = 17,879,227 kWh

FY 2006 Amtrak electricity use
(9,431,279 total Amtrak Northeast corridor passengers)[5](30% riders through Bridgeport)(4 miles of track in Bridgeport)(2,709 Btu/revenue passenger-mile)(3,412 Btu/kWh) = 8,985,698 kWh

FY 2007 Amtrak electricity use
(10,035,012 total Amtrak Northeast corridor passengers)[5](30% riders through Bridgeport)(4 miles of track in Bridgeport)(2,650 Btu/revenue passenger-mile)(3,412 Btu/kWh) = 9,352,678 kWh

[1]Weekday Inbound Daily Station Boardings MNR New Haven Line, 2001, New Haven Data Book, on line http://www.cityofnewhaven.com/CityPlan/pdfs/PlanningPrograms/ComprehensivePlan/Web_Data_Book/Transportation.pdf
[2] Katrina Ellison, Westport Greenhouse Gas Emissions Report, August 15, 2007, Westport, CT
[3]http://www.amtrak.com/pdf/factsheets/CONNECTICUT06.pdf
[4]http://www.amtrak.com/pdf/factsheets/CONNECTICUT07.pdf
[5]Amtrak-Inside Amtrak-News&Media-Energy Efficient Travel, online at http://www.amtrak.com/servlet/ContentServer?pagename =Amtrak/…

Table 26
Marine Fuel Sales in Bridgeport – 2007

	Gasoline (gallons)	Diesel (gallons)
Fayerweather Yacht Club	41,300	205[1]
Pequonnock Yacht Club	30,000	15,000
Captain's Cove	40,000	15,000
Inland Fuels/Santa	0	800[2]
Miamoque Yacht Club	30,000[3]	0
Bridgeport Ferry		1,296,698[4]
Total marine fuel	**141,300**	**1,327,703**

[1] Diesel used only for Fayerweather's launch.
[2] Inland Fuels is a wholesaler, but supplies fuel for the Bridgeport Aquacultural School's *Catherine Moore*
[3] This number is an estimate. Miamoque sells gasoline, but not diesel. It has a 3,000 gallon tank for gasoline, but could not release exact figures on number of times the tank is filled per year. An estimate is once a week or two.
[4] The Company fuels its boats in both Bridgeport, CT and Port Jefferson, NY. Ferries are fueled by trucks, not from marine vessels, and not from on-site fuel sources. Only fuel put into boats in Bridgeport is included in this inventory.

Notes:
A) No fuel is loaded at East End Yacht Club, Black Rock Yacht Club, Dolphin's Cove Marina, Cedar Marina .
B) Mr. Tom Santa reports that barges which deliver fuel to Santa Fuel storage tanks in Black Rock Harbor do not refuel in Bridgeport. Typically they use a heavier grade fuel than what is delivered here. (Source: Santa Energy)
C) Mr. Steve Guveyan, representing the refiners and the terminal operators in Connecticut, reports that fuel is transported in by barge, barges have their own fuel on board, and do not take on any fuel at Bridgeport. Heating oil is trucked out by independent trucks and gasoline is trucked out by tanker truck; fuel is not moved out by marine vessels. (Source: Mr. Steve Guveyan)

Table 27
Community solid waste for Bridgeport

Source	2005 tons	2007 tons
Bpt. transfer station	18,889.13	19,590.13
Privarte haulers	2,119.05	525.49
Bpt. housing	319.97	17.53
Bpt. condos.	4,083.03	1,476.46
Bpt. schools	2,708.19	1,848.22
Bpt. municipal	40,588.26	39,622.70
Total waste	68,707.63	63,080.53

Source: Mr. Frank Feraro, Wheelabrator

Table 28
Bridgeport community recycling

Recycling	**Tons**
Household pickup	2,002
Containers comingle	208
Mixed paper	78
Cardboard	260
Total	2,548

Source: Mr. Armindo Videiro, City of Bridgeport

Recycle rate = 4% citywide

Table 29
Municipal electricity consumption

Location	FY 06[1] kWh	FY 07[2] kWh	FY 08[3] kWh	FY08[4] Cost $
Airport	616,273	597,780	684,791	119,953
Street lights	8,003,090	8,144,946	7,516,574	2,587,062
Traffic lights	466,346	436,982	423,676	106,671
Public facilities bldgs/misc.	10,932,545	11,084,362	12,345,199	2,122,062
P.F. Total	20,018,254	20,264,070	20,970,240	4,935,748
Board of Ed	22,115,729		14,685,414[4]	3,445,478
WPCA electric	16,599,481[5]		16,836,833[5]	2,544,091[5]
Total municipal	**58,733,464**		**52,492,487**	**10,925,317**

[1] Entered into software in Year 2005 analysis
[2] Entered into software in Year 2006 analysis
[3]Entered into software in Year 2007 analysis
[4] Board of Education kWh calculated from actual costs using average cost/kWh for all other municipal electricity ($0.2353/kWh)
[5] This data entered into software in Municipal Water and Sewage sector, not Buildings sector

Table 30
Bridgeport municipal buildings energy use FY 08

	KWh	KWh cost $	Gas ccf	Gas cost $
City Hall	2,070,296	329,908	57,744	101,017
City Hall Annex	2,083,200	321,669	88,010	161,648
Pub Fac Complex	406,864	64,550	30,750	44,355
Salt Shed (Rdwy)	225	1,294		
Scale House (Rdwy)	12,011	2,341		
Transfer Station	301,101	49,773	24,287	43,086
Eviction (Maint)	13,547	2,998		
Bridge-Congress St	4,344	1,146		
Klein	493,712	82,253	18,193	35,048
McLevy Hall	209,062	35,612	16,759	29,119
Health/Welfare	528,800	82,803	23,410	43,708
Wheeler Center	97,649	17,410	11,138	19,519
Ralphola Taylor Ctr	240,800	38,498	9,538	16,800
Eisenhower	345,600	55,224	45,810	79,115
Black Rk Sr.Ctr/PAL	20,480	4,437	10,391	18,625
PAL	34,600	6,796	4,572	8,772
Majestic/Palace Thtr	14,372	3,181		
Elias Howe School				25
Old Marina (storage)				
Christmas Lights	11,757	2,582		
Barnum Museum	231,146	38,261	7,937	14,476
Fire Headquarters	530,861	86,330	22,664	38,033
Fire - Engine 3/4	168,880	27,224	10,210	17,970
Fire - Engine 6	166,880	27,408	11,892	21,073
Fire - Engine 7/11	90,097	16,929	14,829	26,461
Fire - Engine 10	156,795	27,917	3,295	6,756
Fire - Engine 12	21,988	4,300	7,381	13,730
Fire - Engine 15	38,659	5,916	5,507	10,204
Fire - Engine 16	105,240	17,513	9,637	17,150
Fire- EOC				
Fire- Training				
Fire-Civil Defense sirens	528	356		

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Table 30 continued
Bridgeport municipal buildings energy use FY 08

	KWh	KWh cost $	Gas ccf	Gas cost $
Library - Burroughs	492,640	90,173	26,166	63,747
Library - Black Rock	8,007	1,565	50	1,477
Library - North End	213,000	36,660	5,871	10,629
Library-Old Mill Grn	46,107	9,545	2,901	5,957
Library – Newfield	45,577	10,132		
Police Headquarters	604,800	118,073	40,958	72,011
Police - WS Precinct	70,440	12,499	3,576	6,681
Police - ES Precinct	71,000	12,581	7,047	12,631
Police Animal Shelter	123,796	21,929	9,944	17,462
Police An.shltr/narc	106,128	19,287	18,704	31,699
Police Ac./ Newfield	91,548	18,512	9,020	14,113
Police-Com. Serv.	26,988	5,264	4,786	8,544
Parks-Complex Offices/Garage	149,680	25,377	13,287	23,803
Parks-Seaside Pk 1	88,920	18,364		
Parks- Seaside Pk 2	4,378	3,098		
Parks-Washington Pk	24,873	5,932		
Parks-Went Field Firehouse	3,461	1338	2,667	4,365
Parks – Irrigation	1,697	3,595		
Parks Street/Lights, HPS	684,011	192,560		
FW golf 2390 Easton Tnpk	225,725	34,918	17,072	25,558
FW golf 1062 Church Hill Road	9,108	2,151	1,591	2,835
FW golf 1060 Church Hill Road	12,337	3,733	5,006	8,090
FW golf pump house	120	380		
Beardsley Zoo 1	506,608	88,062	45,740	83,294
Beardsley Zoo 2	334,756	55,290	20,258	35,281
Airport	684,791	19,953	44,248	69,807

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Table 30 continued
Bridgeport municipal buildings energy use FY 08

	KWh	KWh cost $	Gas ccf	Gas cost $
BOE Admin	459,280	106,691	24,531	43,850
BOE Aquaculture	380,799	88,460	45,971	82,174
BOE Barnum	155,221	36,058	17,443	31,180
BOE Bassick	830,808	192,997	112,160	200,488
BOE Batalla	1,141,219	265,105	35,707	63,827
BOE Beardsley	186,849	43,405	36,889	65,940
BOE Black Rock	179,473	41,692	21,368	38,196
BOE Blackham	520,470	120,905	91,705	163,923
BOE Bryant	245,511	57,032	12,775	22,836
BOE Central	1,621,011	376,561	154,748	276,613
BOE Columbus	337,206	78,333	2,191	3,918
BOE Cross	195,689	45,459	34,294	61,302
BOE Curiale	583,919	135,644	23,339	41,719
BOE Dunbar	530,222	123,171	33,232	59,403
BOE Edison	169,265	39,320	20,956	37,459
BOE Garfield	124,269	28,868	17,928	32,047
BOE Hall	131,857	30,631	21,700	38,790
BOE Hallen	230,188	53,473	30,360	54,269
BOE Harding	725,813	168,606	169,160	302,374
BOE Holy Rosary	3,640	846	18	32
BOE Hooker	262,969	61,088	47,995	85,792
BOE Howe	67,398	15,657	126	226
BOE JFK	1,664,620	386,691	53148	95,003
BOE Longfellow	327,944	76,181	38650	69,089
BOE Madison	351,770	81,716	35773	63,945
BOE Maint. Garage	65,177	15,141	23353	41,745
BOE Maplewood	197,864	45,964	11621	20,773
BOE Mplwd Annex	85,653	19,897	19251	34,413
BOE Marin	885,367	205,671	41177	73,605
BOE McKinley	150,295	34,914	515	922
BOE PCM	191,269	44,432	44760	80,010
BOE Read	360,234	83,683	51507	92,070
BOE Roosevelt	413,599	96,079	31374	56,083
BOE Sheridan	212,769	49,426	447	799
BOE Skane	120,296	27,945	26770	47,853
BOE Waltersville	259,444	60,269	695	1,243
BOE Waltersville Annex	67,634	15,712		
BOE Webster	77,842	18,083	15144	27,071
BOE Whittier	84,227	19,566	690	1,235
BOE Winthrop	275,967	64,107	53330	95,328

Table 31
Bridgeport municipal fuel purchases by department FY 08[1]

Department	Fuel type	gallons	Cost $
Aquacultural School	unl gas	302	892
Board of Education	dsl	2,111	6,533
Board of Education	unl gas	46,850	104,609
Board of Education	premium	20	52
Mayor	unl gas	1,630	3,964
Mayor	cng	5	13
Mayor	prem	15	50
Mayor	mid	36	106
Nutrition	dsl	4,630	13,929
Nutrition	unl	1,948	3,992
Police Department	dsl	281	866
Police Department	unl	12,264	34,486
Police Department	mid	76,131	223,376
Police Department	prem	13	39
Special education	unl	33,970	97,316
Special education	dsl	10,674	30,745
Roadway	dsl	50,230	149,543
Roadway	unl	8,733	24,481
Roadway	cng	802	1,856
Recycling	dsl	11,503	35,040
Recycling	unl	230	663
Sanitation	dsl	49,115	151,486
Sanitation	unl	5,892	14,659
Vehicle maint	dsl	348	1,009
Vehicle maint	unl	1,232	3,492
Aging	dsl	3,997	12,112
Aging	unl	306	860
Building	unl	1,885	5,229
CAO	unl	567	1,505
CMS	unl	706	1,936
CDA	unl	0	0

-more-

Table 31 Continued

Carpool	unl	496	1,481
City attorney	unl	844	2,208
City attorney	dsl	13	30
Engineering	unl	1,000	2,789
Engineering	cng	116	255
FIN	unl	1,429	3,990
Harbormaster	unl	697	1,990
Health	unl	4,263	11,926
Housing	unl	3,705	10,297
ITS	unl	267	730
LEAD	unl	451	1,260
Library	cng	26	56
Library	unl	866	2,398
Lighthouse	unl	0	0
Mailroom	unl	185	513
OPED	unl	1,266	3,437
OPM	unl	723	1,952
Parks	cng	111	242
Parks	dsl	1,627	4972
Parks	unl	8,654	24,358
Parks	mid	46	137
Purchasing	unl	228	627
Public works adm	unl	3,131	8,688
Public works mtc	cng	247	543
Public works mtc	dsl	1,797	5,469
Public works mtc	unl	7,983	22,147
Tax assessor	unl	515	1,461
Voters	unl	555	1,490
W&M	unl	109	315
Welfare	unl	57	158
WIC	unl	145	407
Zoning	unl	452	1,230
Zoo	unl	962	2,737
Zoo	dsl	87	289
1 Plate	unl	11	26
Total diesel	**dsl**	**136,412**	**412,023**
Total unleaded	**unl**	**155,504**	**406,698**
Total mid gallons	**mid**	**76,213**	**223,619**
Total prem gallons	**prem**	**49**	**141**
Total CNG	**cng**	**1,306**	**2,965**
Total fuel[2]		**369,485**	**1,045,445**

[1] Excluding vehicle fuel for Fire Department, WPCA, and Airport, and excluding fuel for Parks and Golf Course equipment

[2] Entered into software in Year 2007 analysis

Table 32
Municipal fuel consumption overview[1] – conversion to FY 08

	7/07-12/07		1/08-5/08		FY 08[2]	
Fuel	**gallons**	**cost $**	**gallons**	**cost $**	**gallons**	**cost $**
Diesel	68,497	180,914	56,596	192,590	136,412	412,023
Unl	79,529	178,928	63,313	189,808	155,504	406,698
Mid	31,027	82,919	37,656	117,250	68,682	223,619
Prem	33	91	13	42	49	141
CNG	567	1,278	617	1,406	1,306	2,965
Total	179,652	444,130	158,194	501,096	369,484	1,045,445

[1] Excluding vehicle fuel for Fire Department, Airport, WPCA, and excluding fuel for Parks and Golf lawn/maintenance equipment
[2] Data for FY 08 was calculated using 7/07-12/07 data and 1/08-5/08 data prorated to 1/08-6/08. Entered into software in Year 2007.

Table 33
Fire Department Fuel

	FY 05 Gallons	FY 06 Gallons	FY 07 Gallons	FY 08 Gallons	Cost $
Diesel	29,237	30,841	30,566	31,774	95,966[1]
Unleaded	12,423	13,311	16,118	16,147	42,230
Total	41,660	44,152	46,684	47,921	138,196

[1] Fire Department costs calculated from average cost per gallon of fuel for other municipal departments for this time period ($3.02/gallon diesel; $2.62/gallon unleaded)

Table 34
WPCA fuel purchases

Fuel type	FY 06	FY 08 Gallons[1]	FY 08 Cost $
Diesel	25,854	29,692	89,667
Unleaded	32,978	37,582	98,464
Total	58,832	67,274	188,131

[1]Gallons calculated from actual costs using average cost per gallon for all fuel from all other municipal departments for FY 08 ($3.02/gallon diesel; $2.62/gallon unleaded).

Table 35
Airport fuel

	Cal. YR 2005	Cal. YR 2006	Cal. YR 2007
Ethanol	10,632 gal.	9,185 gal.	6,669 gal.

Table 36
Parks Department fuel purchases-equipment[1]

		Gallons[2]	Cost $
Parks Dept general fund	Diesel	16,770	$50,647
Parks Dept general fund	Unleaded gasoline	26,106	$68,398
Parks Dept. FW golf gnl fnd	Diesel	4,526	$13,668
Parks Dept. FW golf gnl fnd	Unleaded gasoline	11,776	$30,854

[1] These purchases separate from fuel purchases for Parks vehicles
[2] Gallons calculated using average cost/gallon of fuel for all fuel from all other municipal departments for FY 08 ($3.02/gallon diesel; $2.62/gallon unleaded gasoline).

Table 37
Total municipal fuel all departments FY 08[1]

Fuel type	Gallons	Cost $
Diesel fuel	219,199	$662,028
Unleaded gasoline	323,377	$870,405
CNG	1,281	$ 2,909
Ethanol (E-10)	6,669	
TOTAL	**550,526 gallons**	**$1,535,342[2]**

[1]Airport fuel is for calendar year 2007; all other fuel is for FY 08.
[2] Fuel costs of $188,131for WPCA fuel are recouped from independent WPCA operator.

Table 38
Bridgeport municipal vehicles

Mayor's office		**3 vehicles**	
BPT1	07	Ford	Escape hybrid
169BPT	08	Ford	Escape hybrid
284BPT	08	Honda	Civic
CAO		**2 vehicles**	
24BPT	06	Ford	Escape hybrid
265BPT	08	Ford	Escape hybrid
Attorney		**1 vehicle**	
435BPT	08	Ford	Fusion
Finance		**2 vehicles**	
449BPT	08	Ford	Focus
509BPT	05	Ford	Explorer
Purchasing		**1 vehicle**	
489BPT	08	Ford	Fusion
OPM		**2 vehicles**	
699BPT	00	Chev	Cavalier
724BPT	06	Ford	Escape hybrid
OPED		**3 vehicles**	
120BPT	96	Ford	Taurus
303BPT	05	Ford	Taurus
650BPT	99	Ford	Contour
Tax assessor		**4 vehicles**	
610BPT	98	Ford	Escort
611BPT	98	Ford	Escort
612BPT	98	Ford	Escort
748BPT	00	Chev	Cavalier
Registrar of voters		**1 vehicle**	
87BPT	93	Ford	Tempo
Zoning		**4 vehicles**	
6BPT	00	Ford	Taurus
620BPT	98	Ford	Escort
623BPT	98	Ford	Escort
639BPT	99	Ford	Crown Vic

-more-

Table 38 continued
Bridgeport municipal vehicles

Building		**8 vehicles**	
23BPT	91	Buick	LeSabre
425BPT	05	Honda	Sedan
481BPT	05	Ford	Escape
614BPT	98	Ford	Escort
615BPT	98	Ford	Escort
616BPT	98	Ford	Escort
617BPT	98	Ford	Escort
619BPT	98	Ford	Escort
Housing code		**8 vehicles**	
98BPT	96	Ford	Crown Vic
174BPT	02	Chev	Impala
251BPT	02	Ford	Taurus
518BPT	95	Chev	Corsica
604BPT	08	Ford	Focus
624BPT	98	Ford	Escort
688BPT	00	Chev	Cavalier
689BPT	00	Chev	Cavalier
Health		**17 vehicles**	
64BPT	95	Ford	Van
105BPT	95	Ford	E350
437BPT	08	Ford	Focus
517BPT	95	Chev	Corsica
537BPT	98	Ford	Escort
556BPT	96	Ford	Taurus
613BPT	98	Ford	Escort
621BPT	98	Ford	Escort
626BPT	98	Ford	Escort
649BPT	99	Ford	Contour
682BPT	00	Chev	Cavalier
683BPT	00	Chev	Cavalier
684BPT	00	Chev	Cavalier
685BPT	00	Chev	Cavalier
686BPT	00	Chev	Cavalier
687BPT	00	Chev	Cavalier
697BPT	00	Chev	Cavalier
Welfare		**1 vehicle**	
625BPT	98	Ford	Escort

-more

Table 38 continued
Bridgeport municipal vehicles

Aging		**2 vehicles**	
40120	06	Ford	Bus
618BPT	97	Chev	Venture
ITS		**2 vehicles**	
260BPT	89	Chev	Van
300BPT	95	Gmc	Van
CMS		**4 vehicles**	
629BPT	98	Ford	Escort
692BPT	00	Chev	Cavalier
693BPT	00	Chev	Cavalier
698BPT	00	Chev	Cavalier
Harbormaster		**3 vehicles**	
159BPT	00	Ford	Expedition
405BPT	98	Load rite	Trailer
669BPT	95	Ford	Crown Vic
Engineering		**4 vehicles**	
522BPT	05	Gmc	Van
638BPT	99	Gmc	Van
690BPT	00	Chev	Cavalier
749BPT	00	Ford	Taurus
Library		**2 vehicles**	
152BPT	03	Thomas	1105N Bkmbl-CNG
184BPT	06	Ford	E250
Mail room		**1 vehicle**	
696BPT	00	Chev	Cavalier
Board of Education		**86 vehicles**	
5BPT	08	Toyota	Avalon
19BPT	01	Buick	Park Ave
45BPT	95	Ford	Crown Vic
51BPT	93	Ford	Crown Vic
52BPT	07	Ford	Crown Vic
53BPT	86	Chev	K-10
55BPT	07	Ford	Crown Vic
65BPT	07	Ford	Crown Vic

-more-

Table 38 continued
Bridgeport municipal vehicles

Board of Education-continued			
67BPT	00	Chev	Astro Van
69BPT	97	Ford	Crown Vic
77BPT	02	Chev	Blazer
78BPT	07	Ford	Crown Vic
79BPT	02	Chev	Blazer
104BPT	97	Ford	Crown Vic
108BPT	01	Ford	Crown Vic
110BPT	91	Chev	Van
123BPT	02	Chev	Van audio
125BPT	00	Gmc	Truck van
139BPT	02	Ford	Crown Vic
140BPT	02	Ford	Crown Vic
155BPT	02	Chev	Van
156BPT	02	Ford	Crown Vic
157BPT	90	Mack	Dump Truck
170BPT	02	Ford	Crown Vic
172BPT	85	Intl	Dump truck
177BPT	90	Chev	Pickup
178BPT	93	Chev	Van
191BPT	02	Chev	Astro van
192BPT	98	Chev	Astro van
194BPT	04	Chev	Van
222BPT	95	Ford	Pickup
223BPT	02	Chev	Astro van
228BPT	02	Chev	Blazer
234BPT	01	Mack	Truck
235BPT	93	Mack	Dump truck
237BPT	01	Mack	Truck
257BPT	00	Chev	Astro van
269BPT	00	Chev	Astro van
278BPT	93	Chev	Sportvan
279BPT	90	John Deere	Tractor
280BPT	00	Chev	Suburban
283BPT	00	Ford	Expedition
289BPT	00	Chev	Suburban
296BPT	00	Chev	Suburban
299BPT	95	Gmc	Van
328BPT		Ford	
337BPT	95	Mack	Refrig truck
365BPT		John Deere	Tractor
366BPT	97	Ford	Crown Vic

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Table 38 continued
Bridgeport municipal vehicles

Board of Education - continued			
369BPT	97	Mack	Truck
383BPT	08	Isuzu	Fvr/van
390BPT	05	Chev	Astro van
393BPT	05	Chev	Astro van
394BPT	05	Chev	Astro van
403BPT	95	Hobart	Trailer
415BPT	98	Chev	Van
416BPT	92	Gmc	Pickup
436BPT	05	Ford	F-250
440BPT	05	Ford	F-250
460BPT	05	Ford	F-250
461BPT	93	Ford	F350
468BPT	85	Chev	Mason Dump
504BPT	93	Trail flite	Trailer
506BPT	96	John Deere	Compressor
515BPT	95	Ford	Crown Vic
521BPT	95	Dodge	Dakota
552BPT	00	Mack	Truck
564BPT	97	Chev	Astro
567BPT	01	Buick	Park Ave
568BPT	05	Isuzu	JT7F042c
569BPT	02	Chev	Blazer
585BPT	05	Isuzu	JT7F042
596BPT	05	Ford	E250
603BPT	98	Mack	MS200P
606BPT	99	Ford	F800
630BPT	98	Dodge	Grand caravan
641BPT	99	Mack	Truck
667BPT	99	Ford	Van
668BPT	99	Ford	Ecoline van
711BPT	94	Buick	Park Ave
718BPT	05	Ford	E250
719BPT	05	Ford	E250
720BPT	05	Ford	E250
721BPT	05	Ford	E250
722BPT	05	Ford	E250
723BPT	05	Ford	E250

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Table 38 continued
Bridgeport municipal vehicles

Public Works/Roadway 190 vehicles			
3BPT	02	Chev	Blazer
7BPT	94	Ford	F250
8BPT	77	Ford	F350 Mason dump
9BPT	80	Mack	Dump rack
10BPT	90	Ford	E350/Bucket
11BPT	79	Mack	R606T
13BPT	80	Mack	R606T
15BPT	80	Mack	R606T
17BPT	79	Intl	Flatbed
18BPT	2000	Gmc	F3600
20BPT	80	Mack	R606T
21BPT	80	Mack	R606T
22BPT	94	Ford	Van
25BPT	2000	Mack	LE613
34BPT	87	Ford	Dump truck
37BPT	85	Chev	Pickup
39BPT	87	Ford	Dump truck
40BPT	80	Mack	R606T
49BPT	91	Chev	C-3500
56BPT	86	Mack	Dump truck
59BPT	05	Ford	Ranger
62BPT	01	Ford	E250(van)
71BPT	01	Gmc	Sierra
72BPT	80	Mack	Dump rack
82BPT	93	Ford	Tempo
83BPT	86	Chev	Dump truck
84BPT	80	Cat 246	Backhoe #3
92BPT	92	Mack	RD6885
99BPT	91	Ford	Truck
106BPT	94	Pelican	Sweeper
107BPT	99	Chev	K2500
109BPT	84	Gmc	Wrecker
111BPT	93	Chev	Cab chassis
112BPT	04	Ccc	LET2-46
113BPT	94	Ford	Pickup
119BPT	05	Ccc	LET2-46
131BPT	97	Custom	Trailer
133BPT	84	Mack	Dump truck
134BPT	86	Mack	Dump rack

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Table 38 continued
Bridgeport municipal vehicles

Public Works/Roadway - continued			
136BPT	86	Mack	Dump rack
138BPT	05	Ccc	LET2-46
142BPT	06	Mack	CV712
146BPT	85	Chev	C-20
153BPT	00	Chev	K-2500
154BPT	04	Ccc	LET2-46
163BPT	84	Mack	Dump truck
166BPT	03	Parker	Trailer
168BPT	99	Chev	Pickup K-2500
171BPT	86	Ford	Dump truck
175BPT	84	Mack	Dump truck
176BPT	84	Mack	Dump truck
182BPT	87	Intl	Fuel truck
186BPT	06	Mack	CV712
187BPT	82	Mack	Dump rack
190BPT	06	Mack	CV712
193BPT	89	Ford	Dump truck
198BPT	08	Ford	Escape hybrid
212BPT	92	Chev	Rack/dump
221BPT	95	Ford	Van
226BPT	93	Chev	Van
233BPT	91	Chev	Cab chassis
238BPT	07	Crane car	LET2-46
239BPT	07	Crane car	LET2-46
240BPT	02	Ford	F150 recycling
242BPT	03	Parker	Trailer
243BPT	02	Chev	Van
244BPT	77	White	Truck
253BPT	99	Chev	Pickup
259BPT	98	Volvo	L-70
261BPT	04	Ccc	LET2-46
263BPT	07	Mack	CV712
268BPT	79	Mack	R606T
270BPT	93	Chev	G-20 Van
282BPT	84	Mack	Dump rack
287BPT	02	Chev	Blazer
294BPT	97	Ford	F350
297BPT	94	Dodge	Ram
298BPT	94	Elgin	Sweeper
304BPT	91	Gmc	Sierra

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Table 38 continued
Bridgeport municipal vehicles

Public Works/Roadway - continued			
310BPT	93	Gmc	Sierra
311BPT	85	Chev	Pickup
313BPT	07	Mack	CV712
317BPT	99	Holland	TS100
318BPT	99	John Deere	Backhoe
320BPT	87	Ingersoll	Compressor 8
333BPT	00	Ford	Windstar/van
334BPT	05	Gmc	Tennant
335BPT	06	Mack	CV712
336BPT	04	Ccc	LET2-46
342BPT	87	Ford	Dump Truck
343BPT	87	Ford	Dump truck
346BPT	87	Ford	Dump truck
348BPT	88	Ford	Pickup
351BPT	87	Gmc	Pickup
353BPT	97	Ford	Ranger
362BPT	94	Mack	Box truck
374BPT	94	Gmc	Jimmy
378BPT	90	Ford	Aerostar
381BPT	98	Ford	Expedition
382BPT	96	Gmc	Jimmy
395BPT	98	Volvo	L-70 Loader
396BPT	04	Ccc	LET2-26 recycling
397BPT	91	Gmc	Kodiak recycling
398BPT	98	Ford	Dump truck
399BPT	04	Ford	Expedition
400BPT	82	Mack	Dump truck
401BPT	98	Ford	Dump truck
402BPT	07	Crane car	LET2-26 recycling
404BPT	99	Parker	Trailer
408BPT	91	Hrvstr	Tb grinder recycling
409BPT	01	Crane car	LET30E recycling
410BPT	01	Crane car	LET30E recycling
411BPT	00		6125
412BPT	98	Ford	Dump truck
413BPT	84	Michicgan	Payldr
414BPT	92	Mack	Box truck
417BPT	92	Ccc	Leach
418BPT	92	Ccc	Leach
419BPT	92	Ccc	Leach
420BPT	92	Ccc	Leach

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Table 38 continued
Bridgeport municipal vehicles

Public Works/Roadway - continued			
421BPT	92	Mack	Dump truck
422BPT	92	Mack	Dump truck
423BPT	92	Mack	Dump truck
424BPT	99	Gmc	Dump truck
426BPT	04	Ccc	LET2-46
427BPT	92	Intl	Dump truck
431BPT	87	Michigan	Payloader
444BPT	90	Ford	Aerostar
455BPT	01	Gmc	Dump truck
458BPT	00		
459BPT	93	Chev	Van
464BPT	05	Ccc	LET2-46
474BPT	93	Ford	F350 Mason dump
476BPT	05	Gmc	Sierra pickup
477BPT	94	Ford	Pickup
497BPT	93	Chev	Chassis/cab
505BPT	96	Bobcat	Trailer
510BPT	95	Mack	
520BPT	98	Volvo	L-70
523BPT	96	Ford	Ecoline/bucket
529BPT	95	Ford	E-150
530BPT	05	Gmc	Van
540BPT	96	Ford	Ecoline/bucket
541BPT	96	Elgin	Sweeper
542BPT	96	Elgin	Sweeper
543BPT	95	Cat	IT38F
544BPT	95	Cat	IT38F
545BPT	96	Elgin	Sweeper
546BPT	96	Elgin	Sweeper
550BPt	96	Ingersoll	Bobcat
551BPT	96	Ingersoll	Bobcat
553BPT	05	Mack	Roll-off recycling
565BPT	94	Ford	F-250
570BPT	07	Big Tex	60SP18(trailer)
571BPT	87	Chev	Wagon
574BPT	97	Ingersoll	Compressor
575BPT	97	Ingersoll	Compressor
576BPT	97	Parker	RA8316 Trailer
577BPT	97	Parker	RA8316 Trailer
579BPT	04	Ford	F250

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Table 38 continued
Bridgeport municipal vehicles

Public Works/Roadway - continued				
581BPT	97	Ford	Ranger recycling	
584BPT	97	Ford	Ranger	
597BPT	98	Mack	RD688P	
598BPT	98	Mack	RD688P	
599BPT	98	Mack	RD688P	
600BPT	98	Mack	RD688P	
607BPT	98	Mobil	M9D-AHL Sweeper	
609BPT	87	Mack	Box truck	
628BPT	98	Ford	Escort	
634BPT	93	Chev	Dump truck	
635BPT	93	Chev	Dump truck	
640BPT	99	Ford	Crown Vic	
643BPT	99	Chev	Pickup	
644BPT	99	Chev	Cargo van	
648BPT	99	Ford	Escort	
651BPT	99	Ford	Expedition	
658BPT	98	Custom	Trailer	
660BPT	00	Bandit	Woodchipper	
663BPT	00	Parker	Trailer	
664BPT	00	Parker	Trailer	
681BPT	00	Chev	Cavalier	
691BPT	00	Chev	Cavalier	
709BPT	94	Gmc	Jimmy	
712BPT	01	Mack	Truck	
713BPT	01	Mack	Truck	
714BPT	01	Mack	Truck	
715BPT	01	Intl	Bulky waste	
716BPT	01	Elgin	Sweeper	
717BPT	01	Elgin	Sweeper	
750BPT	96	Ford	Taurus	
Parks		**71 vehicles**		
458RLR	02	Mercury	Mountaineer	
12BPT	90	Chevy	Mason dump	
16BPT	95	Ford	Escort	
44BPT	03	Ford	Expedition	police
60BPT	90	Plym	Voyager	zoo
88BPT	79	John Deere	Tractor	
90BPT	82	Toro	580D	
91BPT	79	Toro	Tractor	
93BPT	87	Jphn Deere	2155	
96BPT	80	John Deere	Tractor	
		-more-		

Table 38 continued
Bridgeport municipal vehicles

Parks - continued				
101BPT	01	Chev	Van	zoo
116BPT	06	Honda	Element	zoo
122BPT		John Deere	Tractor	
124BPT	92	Mack	Garbage truck	
128BPT	97	Ford	F250	zoo
132BPT	07	Cam	Trailer	
161BPT	95	Ford	Escort	
167BPT	01	Volvo	Truck	
173BPT	94	Ford	Aerostar	zoo
189BPT	98	Dodge	Van-B-2500	
197BPT	02	Ford	F350	
199BPT	08	Autocar	Truck	
202BPT	06	Groundmaster	Kubota	
207BPT	94	Saturn	Wagon	zoo
209BPT	08	Honda	Civic	
211BPT		Toro	580D	
217BPT	02	Ford	F350	
227BPT	06	Groundmaster	Kubota	
230BPT	02	Ford	Ranger	
231BPT	02	Ford	Ranger	
247BPT	80	Ford	Tractor	zoo
267BPT	98	Chev	Pickup K-3500	
306BPT	98	Dodge	Van B-2500	
308BPT	95	Ford	F-250 Crew	
314BPT	93	Chev	Box C-3500	graffiti
321BPT	03	Ford	Expedition	police
331BPT	91	Chev	Dump truck	
332BPT	85	Chev	Dump truck	
338BPT	03	Ford	Expedition	police
345BPT	03	Ford	Expedition	police
347BPT	87	Volvo	FE615	
349BPT	87	Ford	Pickup	zoo
352BPT	87	Gmc	Pickup	zoo
354BPT	04	Ford	Ranger	
356BPT	06	Big Tex	Trailer	
361BPT	99	Ford	F-250 Crew	
363BPT	95	Gmc	Dump 3500	
406BPT	90	Olathe	Trailer	
463BPT		John Deere	Tractor	
475BPT	94	Ford	Pickup	
502BPT	90	Olathe	Trailer	

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Table 38 continued
Bridgeport municipal vehicles

Parks - continued			
507BPT	02	Exiss Stk	Trailer horses
508BPT	96	Hamm	Trailer
516BPT	99	Chev	K-2500 pickup
557BPT	03	Ford	Expedition police
558BPT	99	Chev	Van
559BPT	97	Chev	Suburban
566BPT	91	Chev	Mason dump
572BPT	97	Ford	Van zoo
573BPT	96	Gmc	Route star
578BPT	97	Ford	F350
580BPT	97	Ford	F350
582BPT	97	Ford	Ranger
622BPT	98	Ford	Escort
637BPT	99	Ford	F-350 zoo
645BPT	03	Ford	Expetition
646BPT	96	John Deere	Beach coomer
657BPT	99	Featherlite	Trailer horses
661BPT	98	Trail flite	Trailer
694BPT	00	Chev	Cavalier
695BPT	00	Chev	Cavalier
WPCA		**52 vehicles**	
41BPT	99	Ford	F-250
42BPT	02	Fprd	Ranger
43BPT	89	Ford	F600
47BPT	02	Ford	Ranger
48BPT	03	Sterling	L7500
54BPT	01	Ford	F-550
70BPT	86	Mack	Dump truck
73BPT	01	Steering	Truck
75BPT	08	Ford	F-350
94BPT	99	Steering	Jet vac
95BPT	98	Ford	Vac truck
103BPT	01	Chev	Pickup
114BPT	99	John Deere	Backhoe
115BPT	02	Ford	F250
118BPT	02	Ford	Explorer
143BPT	89	Gmc	Tv truck
144BPT	05	John Deere	Backhoe
150BPT	89	Sullair	Compressor
164BPT	90	Ford	Dump truck

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Table 38 continued
Bridgeport municipal vehicles

WPCA - continued			
179BPT	99	Ford	Explorer
183BPT	71	Intl	Dump truck
208BPT	99	Ford	Crew cab
213BPT	85	Intl	Clamshell
216BPT	93	Cz eng	CZ18KT
232BPT	90	Chev	Blazer
276BPT	87	Ford	Clamshell
281BPT	86	Ford	Gondola
286BPT	02	Sterling	L7500
288BPT	98	Ford	Vac truck
290BPT	07	Freightliner	M2-106
291BPT	93	Gmc	Pickup
326BPT	91	Chev	Boom truck
330BPT	07	Sterling	Truck
339BPT	93	Ford	F800
350BPT	87	Gmc	Pickup
357BPT	87	Ford	Clamshell
358BPT	87	Ford	Clamshell
359BPT	87	Ford	Clamshell
428BPT	92	Gmc	Stepvan
456BPT	94	Ford	Jet vac
457BPT	75	Ford	
465BPT	93	Ford	Cargo van
466BPT	93	Ford	Explorer
467BPT	93	Ford	Explorer
511BPT	95	Chev	Van
514BPT	95	Ford	Explorer
519BPT	95	Samsung	SL150 front loader
554BPT	07	Ford	Explorer
602BPT	93	Ford	Bronco
631BPT	98	Ford	Explorer
662BPT	99	Ingersoll	Compressor
710BPT	00	Sterling	L7501
WIC		**2 vehicles**	
165BPT	95	Gmc	Safari
627BPT	98	Ford	Escort

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Table 38 continued
Bridgeport municipal vehicles

W&M		**2 vehicles**	
324BPT	04	Ford	Ranger
407BPT			Trailer
Airport		**14 vehicles**	
30BPT	72	Intl	Magnun
33BPT	83	Walkers	Snowfighter
46BPT	88	Michigan	Payloader
63BPT	01	Ford	F350
126BPT	02	Ford	Explorer
148BPT	95	Ford	Dump truck
149BPT	04	Ford	Ranger
158BPT	84	Oshkosh	Snowblower
181BPT	91	Oshkosh	T-1500
214BPT	04	Chev	Silverado
273BPT	06	Dodge	Durango
274BPT	80	Oshkosk	Dump truck
636BPT	99	Chev	Blazer
701BPT	00	Ford	Expedition
Bridgeport Fire Department			**49 vehicles (excluding large fire equipment)**
BPT3	93	Chev	Caprice
35BPT	96	Chev	Suburban
50BPT	07	Chev	Suburban
85BPT	07	Chev	Suburban
117BPT	07	Ford	Explorer
145BPT	88	Ford	Lgt conv
147BPT	07	Ford	Expedition
160BPT	07	Dodge	Caravan SE
218BPT	07	Dodge	Caravan SE
225BPT	07	Ford	Explorer
272BPT	07	Dodge	Caravan SE
312BPT	07	Dodge	Caravan SE
370BPT	97	Gmc	Savanna
372BPT	94	Gmc	Vandura
373BPT	02	Dodge	Caravan
375BPT	02	Dodge	Caravan
376BPT	91	Ford	Taurus
379BPT	85	Chev	Vandura
380BPT	81	Gmc	Utility truck
386BPT	91	Ford	Taurus

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Table 38 continued
Bridgeport municipal vehicles

Fire Department –continued			
389BPT	08	Chev	Silverado
391BPT	82	Gmc	Van
392BPT	07	Dodge	Caravan SE
429BPT	92	Ford	Pickup
430BPT	92	Ford	Van
442BPT	93	Chev	Caprice
443BPT	93	Chev	Caprice
462BPT	97	Gmc	Savanna
478BPT	93	Ford	Tempo
479BPT	07	Dodge	Caravan SE
480BPT	07	Dodge	Caravan SE
512BPT	02	Chev	Silverado
531BPT	95	Ford	Crown Vic
532BPT	95	Ford	Taurus
533BPT	95	Ford	Taurus
534BPT	95	Ford	Taurus
535BPT	95	Ford	Taurus
536BPT	95	Ford	Taurus
538BPT	95	Ford	Taurus
539BPT	95	Ford	Taurus
548BPT	96	Chev	Suburban
549BPT	96	Chev	Suburban
555BPT	96	Ford	Taurus
601BPT	88	Chev	Van
642BPT	07	Dodge	Caravan SE
647BPT	07	Ford	Explorer
665BPT	97	Wells Cargo	Trailer
725BPT	07	Dodge	Caravan
726BPT	07	DODGE	Caravan
Bridgeport Police Department			**256 vehicles**
14BPT	95	Ford	Crown Vic
26BPT	93	Chev	Caprice
27BPT	92	Chev	Caprice
28BPT	91	Chev	Caprice
29BPT	91	Chev	Caprice
31BPT	91	Chev	Caprice
32BPT	96	Ford	Crown Vic
36BPT	86	Olds	Cutlass
38BPT	91	Chev	Caprice

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Table 38 continued
Bridgeport municipal vehicles

Police Department - continued			
57BPT	91	Chev	Caprice
58BPT	99	Chev	Van
61BPT	95	Ford	Crown Vic
66BPT	88	Chev	Caprice
68BPT	92	Chev	Caprice
74BPT	92	Chev	Caprice
76BPT	92	Chev	Caprice
80BPT	92	Chev	Caprice
81BPT	92	Chev	Caprice
86BPT	82	Gmc	Van
89BPT	96	Ford	Crown Vic
97BPT	90	Ford	Crown Vic
102BPT	97	Ford	Crown Vic
121BPT	96	Ford	Crown Vic
127BPT	99	Ford	Crown Vic
129BPT	97	Ford	Crown Vic
130BPT	97	Ford	Crown Vic
137BPT	90	Ford	Crown Vic
151BPT	85	Chev	Pickup
162BPT	88	Ford	Pickup
180BPT	97	Ford	Crown Vic
185BPT	96	Ford	Crown Vic
188BPT	00	Fprd	Crown Vic
196BPT	95	Ford	Crown Vic
200BPT	99	Ford	Crown Vic
201BPT	99	Ford	Crown Vic
203BPT	92	Chev	Caprice
204BPT	97	Ford	Crown Vic
205BPT	97	Ford	Crown Vic
206BPT	90	Chev	Pickup
210BPT	96	Ford	Crown Vic
215BPT	90	Chev	Caprice
219BPT	97	Ford	Crown Vic
220BPT	94	Ford	Crown Vic
224BPT	97	Ford	Crown Vic
229BPT	93	Chev	Caprice
236BPT	03	Ford	Crown Vic
241BPT	89	Ford	Crown Vic
245BPT	95	Ford	Crown Vic
246BPT	00	Ford	Crown Vic
248BPT	88	Chev	Caprice

-more-

Table 38 continued
Bridgeport municipal vehicles

Police Department - continued			
249BPT	87	Dodge	Pickup
250BPT	03	Ford	Crown Vic
252BPT	89	Chev	Van
254BPT	81	Chev	Van
255BPT	88	Chev	Caprice
256BPT	92	Ford	Mustang
258BPT	93	Chev	Caprice
262BPT	92	Ford	Crown Vic
264BPT	85	Chev	Van
266BPT	90	Chev	Van
271BPT	03	Ford	Crown Vic
275BPT	03	Ford	Crown Vic
277BPT	92	Ford	Crown Vic
285BPT	75	Ford	Pickup
292BPT	89	Ford	Crown Vic
293BPT	96	Ford	Crown Vic
295BPT	03	Ford	Crown Vic
301BPT	96	Ford	Crown Vic
302BPT	87	Ford	Ecoline
305BPT	96	Ford	Crown Vic
307BPT	97	Ford	Crown Vic
309BPT	03	Ford	Crown Vic
315BPT	97	Ford	Crown Vic
316BPT	98	Ford	Escort
319BPT	97	Ford	Crown Vic
322BPT	97	Ford	Crown Vic
327BPT	95	Ford	Crown Vic
341BPT	95	Ford	Crown Vic
344BPT	95	Ford	Crown Vic
360BPT	03	Fprd	Crown Vic
364BPT	85	Ford	Van
367BPT	03	Ford	Crown Vic
368BPT	03	Ford	Crown Vic
371BPT	95	Ford	Crown Vic
377BPT	03	Ford	Crown Vic
384BPT	96	Ford	Crown Vic
385BPT	93	Chev	Caprice
388BPT	03	Ford	Crown Vic
432BPT	93	Chev	Caprice
433BPT	93	Chev	Caprice
434BPT	93	Chev	Caprice

-more-

Table 38 continued
Bridgeport municipal vehicles

Police Department - continued			
438BPT	93	Chev	Caprice
439BPT	93	Chev	Caprice
441BPT	93	Chev	Caprice
445BPT	93	Chev	Caprice
446BPT	93	Chev	Caprice
447BPT	93	Chev	Caprice
448BPT	93	Chev	Caprice
450BPT	93	Chev	Caprice
451BPT			spare at police
452BPT	93	Chev	Caprice
453BPT	92	Chev	Caprice
454BPT	97	Ford	Crown Vic
469BPT	93	Chev	Caprice
470BPT	93	Chev	Caprice
471BPT	93	Chev	Caprice
472BPT	93	Chev	Caprice
482BPT	91	Plym	Voyager
483BPT	91	Ford	Crown Vic
484BPT	89	Ford	Crown Vic
485BPT	90	Ford	Crown Vic
486BPT	91	Ford	Crown Vic
487BPT	91	Ford	Crown Vic
488BPT	90	Ford	Crown Vic
491BPT	91	Ford	Crown Vic
492BPT	87	Buick	Grand national
493BPT	89	Ford	Crown Vic
494BPT	89	Ford	Crown Vic
495BPT	90	Ford	Crown Vic
496BPT	91	Ford	Crown Vic
498BPT	97	Ford	Crown Vic
499BPT	93	Chev	Caprice
500BPT	00	Ford	Crown Vic
501BPT	00	Ford	Crown Vic
503BPT	99	Smart	Trailer
524BPT	95	Ford	Crown Vic
525BPT	95	Ford	Crown Vic
527BPT	95	Ford	Crown Vic
528BPT	97	Ford	Crown Vic
560BPT	96	Ford	Crown Vic
561BPT	96	Ford	Crown Vic
562BPT	96	Ford	Crown Vic

-more-

Table 38 continued
Bridgeport municipal vehicles

Police Department - continued			
563BPT	96	Ford	Crown Vic
586BPT	96	Ford	Crown Vic
587BPT	96	Ford	Crown Vic
588BPT	97	Ford	Crown Vic
589BPT	96	Ford	Crown Vic
590BPT	96	Ford	Crown Vic
591BPT	96	Ford	Crown Vic
593BPT	96	Ford	Crown Vic
594BPT	93	Chev	Caprice
595BPT	96	Ford	Crown Vic
605BPT	03	Ford	Crown Vic
633BPT	99	Ford	Van
652BPT	99	Ford	Crown Vic
654BPT	99	Ford	Crown Vic
655BPT	99	Ford	Crown Vic
656BPT	99	Ford	Crown Vic
659BPT	99	Smart	Trailer
670BPT	97	Ford	Crown Vic
671BPT	97	Ford	Crown Vic
672BPT	97	Ford	Crown Vic
673BPT	97	Ford	Crown Vic
675BPT	97	Ford	Crown Vic
676BPT	97	Ford	Crown Vic
677BPT	97	Ford	Crown Vic
678BPT	97	Ford	Crown Vic
679BPT	97	Ford	Crown Vic
680BPT	90	Ford	Crown Vic
700BPT	00	Ford	Crown Vic
702BPT	00	Ford	Crown Vic
703BPT	00	Ford	Crown Vic
704BPT	00	Ford	Crown Vic
705BPT	00	Ford	Crown Vic
706BPT	00	Ford	Crown Vic
707BPT	00	Ford	Crown Vic
708BPT	00	Ford	Crown Vic
727BPT	07	Dodge	Charger
728BPT	07	Dodge	Charger
729BPT	07	Dodge	Charger
730BPT	07	Dodge	Charger
731BPT	07	Dodge	Charger
732BPT	07	Dodge	Charger

-more-

Table 38 continued
Bridgeport municipal vehicles

Police Department - continued			
733BPT	07	Dodge	Charger
734BPT	07	Dodge	Charger
735BPT	07	Dodge	Charger
736BPT	07	Dodge	Charger
737BPT	07	Dodge	Charger
738BPT	07	Dodge	Charger
739BPT	07	Dodge	Charger
740BPT	07	Dodge	Charger
741BPT	07	Dodge	Charger
742BPT	07	Dodge	Charger
743BPT	07	Dodge	Charger
744BPT	07	Dodge	Charger
745BPT	07	Dodge	Charger
746BPT	07	Dodge	Charger
747BPT	07	Dodge	Charger
751BPT	00	Ford	Crown Vic
752BPT	07	Dodge	Charger
753BPT	07	Dodge	Charger
754 BPT	02	Harley Dav	King mtrcycle
755 BPT	02	Harley Dav	King mtrcycle
756 BPT	02	Harley Dav	King mtrcycle
757 BPT	02	Harley Dav	King mtrcycle
758 BPT	02	Harley Dav	King mtrcycle
759 BPT	98	Harley Dav	King mtrcycle
760 BPT	98	Harley Dav	King mtrcycle
761 BPT	98	Harley Dav	King mtrcycle
762 BPT	98	Harley Dav	King mtrcycle
763BPT	07	Dodge	Charger
764BPT	07	Dodge	Charger
765BPT	07	Dodge	Charger
766BPT	07	Dodge	Charger
767BPT	07	Dodge	Charger
768BPT	07	Dodge	Charger
769BPT	07	Dodge	Charger
770BPT	07	Dodge	Charger
771BPT	07	Dodge	Charger
772BPT	07	Dodge	Charger
773BPT	07	Dodge	Charger
774BPT	07	Dodge	Charger
775BPT	07	Dodge	Charger
776BPT	07	Dodge	Charger

-more-

Table 38 continued
Bridgeport municipal vehicles

Police Department - continued			
777BPT	07	Dodge	Charger
778BPT	07	Dodge	Charger
779BPT	07	Dodge	Charger
780BPT	07	Dodge	Charger
781BPT	07	Dodge	Charger
782BPT	07	Dodge	Charger
783BPT	07	Dodge	Charger
784BPT	07	Dodge	Charger
785BPT	07	Dodge	Charger
786BPT	07	Dodge	Charger
787BPT	07	Dodge	Charger
788BPT	07	Dodge	Charger
789BPT	07	Dodge	Charger
790BPT	07	Dodge	Charger
791BPT	07	Dodge	Charger
792BPT	07	Dodge	Charger
793BPT	07	Dodge	Charger
794BPT	07	Dodge	Charger
795BPT	07	Dodge	Charger
796BPT	07	Dodge	Charger
797BPT	07	Dodge	Charger
798BPT	07	Dodge	Charger
799BPT	07	Dodge	Charger
800BPT	07	Dodge	Charger
801BPT	07	Dodge	Charger
802BPT	07	Dodge	Charger
803BPT	07	Dodge	Charger
804BPT	07	Dodge	Charger
805BPT	07	Dodge	Charger
806BPT	07	Dodge	Charger
807BPT	07	Dodge	Charger
808BPT	07	Dodge	Charger
809BPT	07	Dodge	Charger
810BPT	07	Dodge	Charger
811BPT	07	Dodge	Charger
812BPT	07	Dodge	Charger
813BPT	07	Dodge	Magnum
814BPT	07	Dodge	Magnum
815BPT	07	Dodge	Magnum
816BPT	07	Dodge	Magnum
817BPT	07	Dodge	Magnum
818BPT	07	Dodge	Magnum
		-more-	

Table 38 continued
Bridgeport municipal vehicles

Bridgeport municipal vehicles – cng or hybrid

(These are already included above under respective departments)

07	Ford	Escape hybrid	Mayor
05	Honda	Civic	Building
05	GMC	Sierra pickup	Pw/Roadway
05	GMC	Van	Pw/Roadway
05	GMC	Van	Engineering
06	Ford	Escape hybrid	Mayor
06	Ford	Escape hybrid	CAO
08	Honda	Civic	Parks
08	Honda	Civic	Mayor
08	Ford	Escape hybrid	CAO
08	Ford	Escape hybrid	Mayor
08	Ford	Escape hybrid	Pw Admin

Bookmobile runs on CNG

Table 39
Fire Department vehicles without BPT plates (engines) 8/6/2008

Department	Year	Make	Model	Type
Marine rescue	1973	Duranautic	14'	Boat
Engine 15	1982	Mack	CF686F	Pumper
Engine 107	1982	Mack	CF686F	Pumper
Engine 106	1982	Mack	CF686F	Pumper
Engine 05	1986	Hahn	HCP20	Pumper
Engine 03	1986	Hahn	HCP20	Pumper
Engine 106	1986	Hahn	HCP20	Pumper
Engine 04	1992	Pierce	Lance	Pumper
Engine 10	1992	Pierce	Lance	Pumper
Engine 12	1992	Pierce	Lance	Pumper
Rescue 05	1992	Pierce	Lance	Rescue L
Ladder 05	1992	Baker	Aerialscope D350	Tower Ladder 75’
MR 1 motor	1992	Evinrude 25	E25RWENB	Outboard motor
Ladder 06	1993	Pierce	Lance	Ladder 100'
Engine 16	1996	Pierce	Lance	Quint L
Ladder 10	1996	Pierce	Lance	Ladder 100'
Rescue	1997	Wells Fargo	EW1624W	Rescue trailer
Engine 07	1997	Pierce	Quantum	Pumper
Engine 06	1997	Pierce	Quantum	Pumper
Engine 01	1997	Pierce	Quantum	Pumper, Nozzle
CP	1997	Navistar inter	SA49540	Command unit
MR 03	1998	Johnson 9.9	J10RECC	Outboard motor
Marine rescue	1998	Johnson 25	J25TEEC	Outboard motor
Marine rescue	2002	Zodiac	PRO II 420	boat 13'9"
Ladder 11	2002	Pierce	Dash	Ladder 100'
Engine 15	2002	Pierce	Dash 2000	Pumper
Ladder 05	2002	Pierce	Dash	Tower ladder 95'
Decon	2002	ACS	Trailer	
Prime mover	2005	Freightliner	Tow vehicle	
E-10 Urban resc		LOWE	L1652MT	Boat

Table 40
Bridgeport municipal Madvacs

Number	Year	Serial #	Type		Location
2	1995	2271	3 Wheel		Parks
3	1995	2270	3 Wheel		Parks
4	1996	2345	3 Wheel		Parks
5	1996	2344	3 Wheel	1519	City yard
6	1996	2346	3 Wheel	1410	City yard
12	1997	2422	3 Wheel		Parks
15	1996	2347	3 Wheel	1711	City yard
33	1997	2418	3 Wheel	1646	City yard(Burn unit)
34	1998	2563	3 Wheel	2563	City yard
30	1998	2562	3 Wheel	1138	City yard
40	2000	2717	4 Wheel	410	City yard
41	2000	2716	4 Wheel	418	City yard
42	2000	2719	4 Wheel	426	City yard
51	2000	2718	4 Wheel	521	City yard
53	2000	2704	4 Wheel	431	City yard
89	2000	2720	4 Wheel	564	City yard

Table 41
Miscellaneous equipment-Parks Department

Name	Type	Model #	Fuel if known
a. 10 Blowers			
Echo PB755H	Backpack blower	BIOO12OO2419	oil and gas
Echo PB755H	Backpack blower	SN06008630	oil and gas
Echo PB755H	Backpack blower	SN06010045	oil and gas
Echo PB755H	Backpack blower	SN06010186	oil and gas
Echo	Backpack blower	5003196	oil and gas
Kawasaki	Backpack blower	KRB700B	oil and gas
xxx	Leaf blower	190402	oil and gas
Echo	Backpack blower	O3022768	oil and gas
Echo	Backpack blower	O6008580	oil and gas
Echo	Backpack blower	O6008383	oil and gas
b. 2 Blower Attachments			
Toro	Blower attachment/4000	220000119	
Toro	Blower attachment/4000	260000106	
c. 24 Weedwackers			
Echo SRM311	Weedwacker	912719	oil and gas
Echo SRM311	Weedwacker	S74412001372	oil and gas
Echo SRM311	Weedwacker	S74412001406	oil and gas
Echo SRM311	Weedwacker	S74412001567	oil and gas
Stihl	Weedwacker	261070379	oil and gas
Stihl	Weedwacker	260156896	oil and gas
Echo	Weedwacker	9009904	oil and gas
Echo	Weedwacker	9001920	oil and gas
Echo	Weedwacker	9008659	oil and gas
Echo	Weedwacker	9013758	oil and gas
Echo	Weedwacker	9012991	oil and gas
Echo	Weedwacker	900594	oil and gas
Echo	Weedwacker	O9009915	oil and gas
Echo	Weedwacker	O9008747	oil and gas
Echo	Weedwacker	O9009981	oil and gas
Echo	Weedwacker	O9008832	oil and gas
Stihl	Weedwacker	261972523	oil and gas
Echo	Weedwacker	565070	oil and gas
Echo	Weedwacker	O9010092	oil and gas
Echo	Weedwacker	O9010092	oil and gas
Echo	Weedwacker	O9008001	oil and gas
Echo	Weedwacker	S74412001414	oil and gas

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Table 41 continued
Miscellaneous equipment-Parks Department

Name	Type	Model #	Fuel if known
Echo	Weedwacker	O9001932	oil and gas
Echo	Weedwacker	O900513	oil and gas
d. 17 Chainsaws			
Stihl	Chainsaw 18"	SN269221196	oil and gas
Stihl	Chainsaw 18"	269060144	oil and gas
Stihl	Chainsaw 18"	269060158	oil and gas
Stihl	Chainsaw 18"	269221148	oil and gas
Stihl	Chainsaw 18"	269060160	oil and gas
Stihl	Chainsaw 18"	SN269221197	oil and gas
Echo	Chainsaw	2046947	oil and gas
Echo	Chainsaw	O9009075	oil and gas
Stihl	Chainsaw	2679262390	oil and gas
Stihl	Chainsaw	O9011934	oil and gas
Stihl	Chainsaw	11287911000	oil and gas
Stihl	Chainsaw	1135791000B	oil and gas
Stihl	Chainsaw	1135791100B	oil and gas
Stihl	Chainsaw	O1171D3000772	oil and gas
Stihl	Chainsaw	O11237911000	oil and gas
Stihl	Chainsaw	11277911000	oil and gas
Echo	Chainsaw	O9011886	oil and gas
e. 11 Hedge trimmers			
Echo HC150	Hedge trimmer	SN09070420	oil and gas
Echo HC150	Hedge trimmer	SN05070395	oil and gas
Echo HC150	Hedge trimmer	S761120222800	oil and gas
Echo HC150	Hedge trimmer	S76112022742	oil and gas
Echo	Hedge trimmer	8007314	oil and gas
Echo	Hedge trimmer	80029644	oil and gas
Echo	Hedge trimmer	8007525	oil and gas
Echo	Hedge trimmer	S7611202271	oil and gas
Echo	Hedge trimmer	617161	oil and gas
Echo	Hedge trimmer	S76112022754	oil and gas
Stihl	Hedge trimmer	252661987	oil and gas
f. 5 Gas pumps			
Gas pump	Diaphram type	P3450	gasoline
Vanguard	7.5 Pump	PT3VSN5395219	gasoline
xxx	Pump	240965	gasoline
xxx	Pump	GC013830480	gasoline
xxx	Pump P3451	5305	gasoline

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Table 41 continued
Miscellaneous equipment-Parks Department

Name	Type	Model #	Fuel if known
g. 2 Generators			
Gas welder/gen	Miller	G843803470	gasoline
Generator		960615YE	gasoline
h. 4 Golf carts			
Club car	Golf cart	RG0048-961579	gasoline
Club car	Golf cart	961581	gasoline
Club car	Golf cart	RG9937-802823	gasoline
Club car		AG9943-819599	gasoline
i. 9 Pushmowers			
Toro	21'' Pushmower	FJ180VD73743	gasoline
Toro	21" Pushmower	FJ180VD73739	gasoline
Toro	Pushmower	FJ180VD73668	gasoline
Troy	Pushmower	1E114K21525	gasoline
Troy	Pushmower	1E114K21548	gasoline
Murry	Pushmower	303157	gasoline
xxx	Pushmower	1F175120090	gasoline
Toro	Pushmower	FJ180BD731	gasoline
Toro	Pushmower	1F75200	gasoline
j. 11 lawnmowers			
Exmark	Lawnmower	4768816	diesel
Exmark	Lawnmower	SN476852	diesel
Exmark	Lawnmower	541224	diesel
Exmark	Lawnmower	543G45	diesel
Deck only	72" Mower 325 D		diesel
Deck only	72" Mower 325 D		diesel
E-Mark	Lawnmower	323344	diesel
E-Mark	Lawnmower	631302	diesel
E-Mark	Lawnmower	485230	diesel
E-Mark	Lawnmower	543648	diesel
Gravely	Walk behind	2626	
k. 6 Madvacs			
Madvac			diesel
Madvac	101D	3239	diesel
Madvac	101D	3139	diesel
Madvac	101- D	2563	diesel
Madvac	101- D	2346	diesel
Madvac	101- D	2717	diesel
Madvac	101- D	2347	diesel

-more-

Table 41 continued
Miscellaneous equipment-Parks Department

Name	Type	Model #	Fuel if known
l. 6 Sprayers			
xxx	25 Gallon sprayer	7068331D04Z0024	gasoline
FMC Sprayer		A285304	gasoline
Pressure tank	Field marking		gasoline
FMC Sprayer			gasoline
Spray machine	Field marking		gasoline
Spray machine	Field marking		gasoline
m. 2 Ball machines			
Toro	Ball machine	70266	diesel????
Toro	Ball machine	70262	diesel????
n. 4 Pole saws			
Stihl	Pole saw	SN26364507	oil and gas
Stihl	Pole saw trimmer	7206678	oil and gas
Stihl	Pole saw trimmer	261720656	oil and gas
Echo	Pole saw	534446	oil and gas
o. 4 Workmates			
Toro	Workmate	70176	
Toro	Workmate	07205-70167	
Toro	Workman		
Toro	Workman	07215TC 21000148	
p. 4 Snowblowers			
Toro	Snowblower	240005145	
Toro	Snowblower	240005183	
Toro	Snowblower	240005188	
Toro	Snowblower	240005189	
q. 5 Vacuums			
Tennant	Vacuum	5S7588	diesel
Tennant	Vacuum	558220	diessel
Push	Vacuum	GC02-6251714	oil and gas
Push	Vacuum	GC02-6251716	oil and gas
Push	Vacuum	GC02-7741130	oil and gas

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Table 41 continued
Miscellaneous equipment-Parks Department

Name	Type	Model #	Fuel if known
r. 5 Brooms/attachments			
Broom	325-D	210000-127	
Echo	Broom	O6026481	
Echo	Broom	O6026562	
Toro	Broom attachment/4000	260000115	
Toro	Broom attachment/4001	260000119	
s. 5 Ballfield graders			
Jacobsen	Ballfield grader	88008D1843	diesel
Jacobsen	Ballfield grader	8800801838	diesel
Jacobsen	Ballfield grader	8800801839	diesel
Top dresser	2500	210000145	diesel
Bluebird	Sod cutter	65000475	diesel
t. 3 Augers			
Stihl	Auger	32571930	
Echo	Auger	BO1705004953	
Auger 16"	For New Holland	56977	
u. 2 Tillers			
Yardman	Tiller	Tiller	
White	Tiller	1J018K50167	
v. 2 Cutters			
X-mark	Cutter	xxx	diesel
E-mark	Cutter	323368	diesel
w. 26 Miscellaneous			
Iron & oak	34 Ton log splitter	S007171	
Toro	325 D		
Toro	325 D	631302	diesel
Toro	580 D	50148	
Toro	325 D	2100000345	
Toro	325 D	60477	
New Holland	LS170	108306	
xxx	Battery charger	S060710	
Excel 2600	Powerwasher	2651098077	
Beta	Mig welder 250		
Xxx	Large arc welder		
Stihl	Concrete chop saw	165703126	

-more-

Table 41 continued
Miscellaneous equipment-Parks Department

Name	Type	Model #	Fuel if known
Cement mixer	131574		
Agriblower	Fits John Deere tractor		gas
Aera-vator	tractor attachment 508		
Toro	Seeder	91707	
xxx	Torpedo heater	WP060	
xxx	Torpedo heater	O8-2006	
Tennant 6500	Sweeper	SN65006645	
HP	Portable compressor	WL510004AJ	
Toro	Groundmaster	30410-260000726	
Little Wonder	Edger	070119YA2IO32	
Wacker	Trash pump	5368337	

Table 42
Miscellaneous equipment golf course

Name	model	Serial #	Fuel type
a. 3 Mowers			
Gplex tee mower1	898861	1000318	diesel
Gplex tee mower2	898861	6552	diesel
Turfcat mower	946714	48	diesel
b. 4 Fairway mowers			
LF3400	76946	1963	diesel
LF3400	76946	1968	diesel
Jac2500	945023	117	diesel
Jac2500	94023	124	diesel
c. 3 Rough mowers			
580 rough	30581	210000366	diesel
4000 rough	30410	2100	diesel
62 223 D	30243	2000	diesel
d. 5 Green mowers			
GM3100	4356	220000585	gasoline
2	34356	260000366	gasoline
3	34356	260000346	gasoline
4	4356	260000270	gasoline
5	4356	220000577	gasoline
e. 5 Golf carts			
Club Car Cart 1	Rg073	793028	gasoline
Club Car Cart 2		793029	gasoline
Club Car Cart 3		793030	gasoline
Club Car Cart 4		793031	gasoline
Club Car Cart 5		793032	gasoline
f. 2 Vac blowers			
Giant vac blower	Zmount	50261510	gasoline
Giant vac blower	Zmount	50261509	gasoline
g. 4 push blowers			
Push blower 1	Gvac	41141484	gasoline
Push blower 2	Gvac	41141463	gasoline
Push blower 3	Gvac	out of service	
PushbBlower 4	Gvac	out of service	

-more-

Table 42 continued
Miscellaneous equipment golf course

h. 2 Sidewinders			
Sidewinder 1	30839	260000310	diesel
Sidewinder 2	30839	220000650	diesel
i. 2 Sandpros			
Sandpro 1	8886	90001	gasoline
Sandpro 2		out of service	
j. 3 Water pumps			
Water pump 1	MQ303H	510	gasoline
Water pump 2	MQ303H	511	gasoline
Water pump 3	John Deere	parts only	
k. 6 weedwackers			
xxx	Echo	568582	oil and gas
xxx		9001909	oil and gas
xxx		9001921	oil and gas
xxx		9012723	oil and gas
xxx		9012726	oil and gas
xxx	Stihl	9001845	oil and gas
l. 5 Backpack blowers			
xxx	Stihl	269289595	oil and gas
xxx	Kawasaki	Hg400A	oil and gas
xxx	Stihl	268071857	oil and gas
xxx	Stihl	26928958	oil and gas
xxx	Sthil	2692860	oil and gas
m. 3 Chainsaws			
Chainsaw 1	Stihl	MS250	oil and gas
Chainsaw 2	Stihl	MS021	oil and gas
Chainsaw 3	Stihl	MS5460	oil and gas
n. 2 Pole saws			
xxx	Stihl	268902678	oil and gas
xxx	Stihl	523819	oil and gas
o. 6 Miscellaneous			
Turfco topdresser	85804	g0036	gasoline
Steiner	7570008	LL8504	diesel
Cushman truckster	898628	2304440	diesel
Multi Pro5600 sprayer	41568	220000219	gasoline
New Holland tractor	11813L CSD	11236	diesel
Procore green aerator	9200	250000	diesel
120 gasoline-powered golf carts are rented for use by golfers			gasoline

Table 43
Electricity consumption for street lights in Bridgeport

John Cottell provided kWh used by street lights for three fiscal years: FY 06, FY 07 and FY 08 (used in the inventory) as well a single-month usage figure for 79 of the 89 total accounts for January 2004. Multiplying January 2004 kWh of 870,217 kWh by twelve provides an estimate of total kWh for FY 04 of 10,442,604 kWh. This compares with other years as follows:

Year	kWh	Change	Change FY 06-08	Change FY 04-08
FY 04	10,442,604			
FY 06[1]	8,003,090			
FY 07[2]	8,144,946	+141,856		
FY 08[3]	7,516,574	-628,372	-486,516	-2,926,030

[1] Entered into software in Year 2005 analysis
[2] Entered into software in Year 2006 analysis
[3] Entered into software in Year 2007 analysis

Table 44
Cost of electricity consumption for street lights in Bridgeport

The cost of electricity for street lights for ten of twelve months in FY 04 was $1,720,388, which divided by ten gives a one month average of $172,039. Multiplying this monthly average by twelve provides the FY 04 cost of electricity of $2,064,468. This compares with other years as follows:

Year	Cost of Electricity	
FY 04	$2,064,468	(actual cost)
FY 06		
FY 07		
FY 08	$2,587,062	(actual cost)

Table 45
Cost savings from reductions in street light electricity consumption

The actual cost per kilowatt-hour of electricity used for streetlights in FY08 was calculated to be $0.344/kWh. This FY 08 electrical cost is multiplied by kWh of electricity used in other years to determine cost savings in FY 08 dollars:

Change FY 06-07	141,860kWh X $0.344/kWh = $ 48, 800 increase
Change FY 07-08	628,372 kWh X $0.344/kWh = $216,159 reduction
Change FY 06-08	486,516 kWh X $0.344/kWh = $167,361 reduction
Change FY 04-08	2,866,030 kWh X $0.344/kWh = $985,914 reduction

Table 46
Electricity Consumption for Traffic Lights in Bridgeport

Year	kWh	Cost
FY 06[1]	466,346	
FY 07[2]	436,982	
FY 08[3]	423,676	$106,671

[1] Entered into software in Year 2005 analysis
[2] Entered into software in Year 2006 analysis
[3] Entered into software in Year 2007 analysis

Table 47
Electricity consumption WPCA water and sewage treatment facilities and operations

	Cal. Year 05[1]		FY 08[2]	
Location	kWh	Cost $	kWh	Cost $
East side	5,513,200	525,365	5,559,400	$ 830,747
West side	10,066,000	1,006,520	10,760,400	$1,624,287
Pump station	520,527	67,193	505,348	$ 85,733
CSO op	16,432	3,273	11,685	$ 3,324
TOTAL	16,116,159	1,602,352	16,836,833	$2,544,091

[1] Entered into software in Year 2005 analysis [2] Entered into software in Year 2007 analysis

Table 48
Natural gas consumption WPCA water and sewage treatment facilities and operations

	Cal. Year 05[1]		FY 08[2]	
Location	CCF	Cost $	CCF	Cost $
East side	92,678	132,500	117,597	$182,999
West side	89,610	121,047	82,250	$138,966
Pump Sta	55	676	121	$ 998
TOTAL	182,343	254,223	199,968	$322,963

[1] Entered into software in Year 2005 analysis in Municipal Water and Sewage sector, not buildings sector
[2] Entered into software in Year 2007 analysis in Municipal Water and Sewage sector, not buildings sector

Table 49
Bridgeport municipal employees – commute to work

Home zip code	No. of commuters	Miles one way*	Miles round trip	Miles X no. of commuters
01056	1	92.93	185.86	185.86
01106	1	79.85	159.7	159.7
02052	1	146.83	293.66	293.66
06002	2	66.45	132.9	265.8
06010	3	46.85	93.7	281.1
06016	1	75.02	150.04	150.04
06019	2	62.08	124.16	248.32
06037	2	46.09	92.18	184.36
06040	1	64.37	128.74	128.74
06051	1	53	106	106
06062	1	47.52	95.04	95.04
06066	1	68.57	137.14	137.14
06067	1	49.31	98.62	98.62
06073	1	64.27	128.54	128.54
06092	1	66.38	132.76	132.76
06095	1	63.95	127.9	127.9
06098	2	59.9	119.8	239.6
06109	1	53.24	106.48	106.48
06111	1	49.78	99.56	99.56
06120	1	58.45	116.9	116.9
06226	1	82.23	164.46	164.46
06232	1	74.27	148.54	148.54
06238	1	74.75	149.5	149.5
06320	1	65.35	130.7	130.7
06357	1	58.07	116.14	116.14
06359	2	82.86	165.72	331.44
06370	1	69.39	138.78	138.78
06401	60	14.6	29.2	1752
06403	20	22.14	44.28	885.6
06405	26	25.67	51.34	1334.84
06410	12	32.55	65.1	781.2
06413	3	39.92	79.84	239.52
06417	1	49.89	99.78	99.78
06418	49	13.03	26.06	1276.94
06422[1]	1	41.63	83.26	83.26
06425[2]	1	5.89	11.78	11.78
06430[3]	8	5.89	11.78	94.24
06432	6	3.52	7.04	42.24
06437	4	33.21	66.42	265.68
06439	1	60.47	120.94	120.94
06443	6	37.9	75.8	75.8
06444	1	38.6	77.2	77.2
06450	10	38.62	77.24	772.4

06451	5	42	84	420
06457	6	45.26	90.52	543.12
06460	235	9.99	19.98	4695.3
06461	12	8.99	17.98	215.76
06468	163	13.03	26.06	4247.78
06470	22	20.37	40.74	896.28
06471	3	29.55	59.1	177.3
06472	1	29.26	58.52	58.52
06473	13	27.88	55.76	724.88
06475	1	48.22	96.44	96.44
06477	39	14.69	29.38	1145.82
06478	60	22.66	45.32	2719.2
06479	2	39.5	79	158
06482	20	19.77	39.54	790.8
06483	78	17.58	35.16	2742.48
06484	281	12.83	25.66	7210.46
06487	1	24.99	49.98	49.98
06488	8	28.88	57.76	462.08
06489	2	42.5	85	170
06490[4]	2	6.77	13.54	27.08
06492	16	31.24	62.48	999.68
06497	1	4.7	9.4	9.4
06498	2	43.86	87.72	175.44
06511	25	20.21	40.42	1010.5
06512	16	21.83	43.66	698.56
06513	17	22.69	45.38	771.46
06514	26	22.75	45.5	1183
06515	25	18.91	37.82	945.5
06516	99	15.7	31.4	3108.6
06517	16	23.03	46.06	736.96
06518	16	26.04	52.08	833.28
06519	4	18.09	36.18	144.72
06520	1	19.3	38.6	38.6
06524	8	24.33	48.66	389.28
06525	8	20.33	40.66	325.28
06601	22	1.3	2.6	57.2
06602	1	1.3	2.6	2.6
06604	246	0.76	1.52	373.92
06605	170	1.97	3.94	669.8
06606	704	2.97	5.94	4181.76
06607[5]	66	2.29	4.58	302.28
06608	89	1.53	3.06	272.34
06610	326	2.96	5.92	1929.92
06611	288	6.47	12.94	3726.72
06612	27	11.42	22.84	616.68
06614	265	7.34	14.68	3890.2
06615	136	4.14	8.28	1126.08
06670	2	25.83	51.66	103.32

06704	13	33.82	67.64	879.32
06705	4	33.06	66.12	264.48
06706	7	29.33	58.66	410.62
06708	13	30.9	61.8	803.4
06710	1	31.84	63.68	63.68
06712	11	30.13	60.26	662.86
06716	7	35.97	71.94	503.58
06751	1	44.07	88.14	88.14
06762	4	30.81	61.62	246.48
06763	1	45.85	91.7	91.7
06770	64	25.83	51.66	3306.24
06776	4	40.92	81.84	327.36
06779	4	33.77	67.54	270.16
06782	1	41.03	82.06	82.06
06783	1	32.28	64.56	64.56
06786	2	42.94	85.88	171.76
06787	1	39.28	78.56	78.56
06790	1	52.17	104.34	104.34
06791	2	49.02	98.04	196.08
06795	7	36.97	73.94	517.58
06798	7	33.42	66.84	467.88
06801	9	25.89	51.78	466.02
06804	5	27.58	55.16	275.8
06807	1	26.25	52.5	52.5
06810	3	32.05	64.1	192.3
06811	6	31.42	62.84	377.04
06812	2	35.79	71.58	143.16
06813	1	31.34	62.68	62.68
06814	1	34.21	68.42	68.42
06820	1	18.41	36.82	36.82
06824	74	5.89	11.78	871.72
06825	63	3.92	7.84	493.92
06838	1	8.61	17.22	17.22
06840	2	20.89	41.78	83.56
06850	8	16.58	33.16	265.28
06851	12	15.23	30.46	365.52
06853	1	17.23	34.46	34.46
06854	13	15.75	31.5	409.5
06855	1	14.01	28.02	28.02
06876	2	19.71	39.42	78.84
06877	3	31.24	62.48	187.44
06880	12	11.64	23.28	279.36
06883	4	19.91	39.82	159.28
06890	2	6.77	13.54	27.08
06896	6	22.68	45.36	272.16
06897	11	21.21	42.42	466.62
06901	1	22.06	44.12	44.12
06902	4	22.31	44.62	178.48

06903	1	25.92	51.84	51.84
06905	2	25.43	50.86	101.72
06906	1	22.03	44.06	44.06
06907	2	23.29	46.58	93.16
06980[6]	1	11.64	23.28	23.28
08251	1	215.76	431.52	431.52
10021	1	55.19	110.38	110.38
10025	2	56.81	113.62	227.24
10031	1	53.82	107.64	107.64
10456	1	50.69	101.38	101.38
10528	1	35.2	70.4	70.4
10549	2	39.17	78.34	156.68
10590	1	29.27	58.54	58.54
10598	1	45.49	90.98	90.98
10706	1	47.81	95.62	95.62
10708	1	44.73	89.46	89.46
10801	1	38.92	77.84	77.84
10804	1	39.76	79.52	79.52
11030	1	58.08	116.16	116.16
11357	1	49.54	99.08	99.08
27514[7]	1	563.28	1126.56	1126.56
93940[7]	1	3076.98	6153.96	6153.96
Grand Total	4250 employees			

TOTAL MILES **93598.64 miles per day all employees**

Adjusted total **86318.12 miles per day all employees**

*numbers from Mapquest to 999 Broad Street, Bpt.

[1] Old zip code; assumed to be reassigned zip code 06824
[2] Old zip code; assumed to be reassigned zip code 06824
[3] Old zip code: assumed to be reassigned zip code 06825
[4] Old zip code; assumed to be reassigned zip code 06890
[5] Questionable zip code; assumed to be transposed 06770
[6] Old zip code; assumed to be reassigned zip code 06880
[7] This zip code assumed to be too distant for daily commute. Associated mileage was excluded from adjusted total.

Table 50
Bridgeport municipal employee commute – maximum possible annual commute

Bridgeport has 4250 employees

Single day commuter mileage equals 93598.64 miles/day all employees (See Table 49).

An adjusted commuter mileage of 86,318 miles per day for all employees was used for this calculation. The adjusted commuter mileage excludes two employees listed as being from very distant zip codes (North Carolina and California). The number of employees was adjusted to 4,248 as a result.

The number of Board of Education staff is assumed to include 1,220 teachers.*

This group equals $\frac{1,220}{4,248}$ = 28.7% of total employees
This inventory assumes this group of employees has 190 commuter days/year.

The number of full-year commuting staff is 4,248 – 1,220 = 3,028.

This group equals $\frac{3,028}{4,248}$ = 71.3% of total employees
This inventory assumes this group of employees has 240 commuter days/year.

.
Annual employee commute is calculated as follows:

Annual commuter mileage is calculated by multiplying the following:
(total commuter daily mileage)(percentage of city employees which commutes part of year or full year)(commuter days per year for teachers or for full year employees):

(86,318 miles/day)(0.287)(190days/year) = 4,706,921 miles/year - teachers

(86,318 miles/day)(0.713)(240 days/year) = 14,770,736 miles/year - full-year employees

Total annual employee commute 19,477,657 miles/year

This inventory assumes all employees drive to work, thereby providing the maximum possible employee commuter mileage.

*The Board of Education website reports over 1,700 professional staff. Source: http://www.bridgeportedu.com/Board/Board%20General%20Info.html
The number of teachers is reported to be 1,221. Source: Local School Directory, online at http://www.localschooldirectory.com/districts.php/district_id/15/district_state/CT

Table 51
Fugitive Emissions from Wastewater Treatment

10.3.2.1 Process Emissions from WWTP with Nitrification/Denitrification
Equation 10.7 Process N2O Emissions from WWTP with Nitrification/Denitrification
Source: EPA *Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006*, Chapter 8, 8-14 (2008).

ICLEI government GHG emissions accounting protocol recommends determination of fugitive emissions resulting from wastewater treatment. Bridgeport processes wastewater through a centralized system with nitrification/denitrification. Treating wastewater in this manner releases fugitive N2O emissions. Emissions depend, in part, on population. The population served by the Bridgeport facilities is 157,250. No significant industrial sources of nitrogen are included.

The City's fugitive N_20 emissions related to waste water treatment equals 1.1 metric tons of N_2O, derived as follows:

Annual N2O emissions (metric tons) = Ptotal x EF nit/denit x 10^{-6}

where:

Term	**Description**	**Value**
Ptotal	= total population that is served by the centralized WWTP adjusted for industrial discharge, if applicable [person]	user input
EF nit/denit	= emission factor for a WWTP with nitrification/denitrification [g N2O/person/year]	7
10^{-6}	= conversion from g to metric ton [metric ton/g]	10^{-6}

Bridgeport fugitive N_20 emissions related to waste water treatment =
$(157,250)(7)(10^{-6}) = (1,100,750)(10^{-6}) = 1.1$ metric tons N_2O

Table 52
Bridgeport, CT Emissions Scopes – Community Inventory

Bridgeport, CT Community Greenhouse Gas Emissions by Scope

Sector	Scope 1 tonnes	Scope 1 MMBtu	Scope 2 tonnes	Scope 2 MMBtu	Scope 3 tonnes	Scope 3 MMBtu
Residential						
electricity			137,169	1,127,698		
light fuel oil	61,389	818,610				
natural gas	100,250	1,788,657				
Commercial						
electricity			150,933	1,240,855		
light fuel oil	47,241	629,948				
natural gas	83,153	1,483,604				
Industrial						
electricity			28,409	233,560		
light fuel oil	6,220	83,135				
natural gas	52,694	940,162				
Transportation						
automobile gasoline	263,069	3,393,513				
automobile diesel	50,891	646,767				
rail-M-N electricity			7,422	61,021		
rail-Amt electricity			3,883	31,920		
marine gasoline	1,376	17,748				
marine diesel	12,745	161,998				
Waste	9,697					
Waste-biogenic	3,002					
Ash to landfill					Putnam, CT	
Incin.facility	electric	generated				
Other						
Seaside landfill	0					

Table 53
Bridgeport, CT Emissions Scopes - Municipal Inventory

Bridgeport, CT Municipal Greenhouse Gas Emissions By Scope

Sector	Scope 1 tonnes	Scope 1 MMBtu	Scope 2 tonnes	Scope 2 MMBtu	Scope 3 tonnes	Scope 3 MMBtu
Buildings						
electricity			11,585	95,239		
natural gas	12,099	311,110				
Fleet						
CNG	0	0				
Diesel	2,114	26,742				
E-10	50	711				
E-10 biogenic	5	79				
Gasoline	3,149	68,148				
Employee commute						
gasoline					10,776	139,005
Street/traffic lights						
electricity			3,296	27,100		
Water/waste						
electricity			6,990	57,464		
natural gas	1,143	20,399				
Solid waste-no input						