



**City of Annapolis Department of Neighborhood and
Environmental Programs (DNEP)**

Hon. Ellen O. Moyer, Mayor

Michael D. Mallinoff, Director

**Energy Consumption and Greenhouse Gas Emissions
Inventory of the City of Annapolis in 2006**

Produced for:
The City of Annapolis

Produced by:
Frank Biba, Chief of Environmental Programs
Maria Broadbent, Environmental Programs Coordinator
Rob Savidge, Sustainability Coordinator, Straughan Environmental Services

August 2008

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INTRODUCTION

As a city that is surrounded by 6 bodies of water—Weems Creek, Spa Creek, Back Creek, College Creek, Severn River, and the Chesapeake Bay— Annapolis residents have good reason to be worried about contributing to climate change and sea level rise. In September of 2003, when hurricane Isabel visited Annapolis, we saw the effects that flooding can have on our city. Later that year, the City joined an international organization called Local Governments for Sustainability (ICLEI), and started participating in their Cities for Climate Protection (CCP) program that laid out steps for cities to follow in order to inventory, reduce, and monitor their greenhouse gas emissions. In 2005, Mayor Ellen O. Moyer joined more than 850 US mayors and signed the US Mayors Climate Protection Agreement¹, which was followed by the city creating an energy efficiency task force, whose purpose was to deliver recommendations to the city for improving energy efficiency of the government and the entire city. The task force's recommendations were released in 2006, and shortly thereafter a resolution was passed that committed the city to following the CCP milestone program (see Appendix A), which includes conducting greenhouse gas emissions inventories for the city government and the city at large. The Mayor's and city council's commitment to passing this legislation laid the groundwork for the city's ongoing action to combat against climate change.

The City of Annapolis Energy Efficiency Task Force was established in October 2005 "to study the application and recommend the implementation of energy efficient standards for the city to reduce costs, reduce energy consumption, and to reduce our reliance upon foreign petroleum." The committee met for six months and produced twelve recommendations, which were then adopted by the City Council as a guide for the city's energy policy (Appendix B). Chief among these recommendations was that the city commit to a 10% reduction in energy use of all publicly owned or leased facilities within 5 years and a 15% reduction by 2020. In order to forecast and measure progress towards future reductions, the city was required to establish an inventory of energy use and emissions for a baseline year. From March to May 2006, Frank Biba and Eric Schmitt of the Department of Neighborhood and Environmental Programs conducted a municipal energy inventory. Their findings are summarized in a report entitled *The Energy Consumption and Greenhouse Gas Emissions of the Facilities and Operations of the City of Annapolis in Fiscal Year 2006*, available on the city's website.² That inventory showed that the three main CO₂ contributors for city government are the vehicle fleet (32%), water/sewage systems (30%), and city buildings (27%). This inventory has helped the city government determine where action should be taken to lower our carbon footprint. A year later, in 2008, Annapolis started conducting a greenhouse gas emissions inventory for the entire city.

In completing these greenhouse gas inventories of the city government and the entire city, Annapolis joins over 350 other local governments across the nation who are following the ICLEI

¹ <http://www.usmayors.org/climateprotection/agreement.htm>

² <http://www.annapolis.gov/upload/images/government/depts/mayor/EnergyInventoryFinalReport.pdf>

Cities for Climate Protection (CCP) milestone program. The milestone program has five components: 1.) Conduct a greenhouse gas emissions inventory, 2.) Set a reduction target, 3.) Create a Climate Action Plan (CAP), 4.) Implement the CAP, 5.) Monitor CAP progress. Annapolis has now completed milestones #1 and #2. The city has set an emissions reduction target of 25% of 2006 levels by 2012, which is equivalent to the Kyoto protocol's 7% reduction of 1990 levels. We chose this target because the Annapolis Mayor has signed the US Mayors Agreement on Climate Protection, which set a goal matching the Kyoto protocol's reduction target (7% reduction of 1990 levels by 2012). The inventory base year of 2006 was used for two reasons: 2006 was the year used for the city government inventory, and 2006 is the base year used by the Maryland Commission on Climate Change in their interim state Climate Action Plan³.

The software used during the inventory was the Clean Air and Climate Protection (CACP) Software, developed by the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), the International Council for Local Environmental Initiatives (ICLEI), and Torrie Smith Associates. This measures quantities of greenhouse gas (CO₂, NO₂, and CH₄) or CO₂ equivalents (CO₂e) produced based on the size and sources of energy consumption. Additionally, the program measures the production of other air pollutants and this data has been included as an appendix to this report (APPENDIX C).

The CACP software separates the greenhouse gas emissions into 4 different sectors: energy, transportation, waste, and other. The city's total electricity and fuel use is collected in the energy sector. This data is separated into total residential, commercial, and industrial energy use. Emissions from the energy sector are indirect, meaning they don't emit from the energy users themselves; rather, they result from the power plants that supply the energy. The transportation sector models the direct emissions resulting from the annual Vehicle Miles Traveled (VMT) for different vehicle types within the city. Emissions resulting from the storage or management of waste produced within the city are input into the waste sector. For example, waste is typically deposited into a landfill or sent to an incinerator, both of which have direct greenhouse gas emissions. The other category is used to input any other direct source of CO₂ emissions within the city limits.

When collecting data for the inventories, we only collected data from sources within the city limits, which excludes the Naval Academy. Some of the sources we factored in are the State buildings, St. Johns, the Housing Authority of the City of Annapolis, and county schools within the city limits.

Now that the inventories have been completed, the city government will use them to help guide their continuing action to protect our climate and lower our carbon footprint. However, much of the action will come from the residents themselves. In order to help us come together as a community and fight to protect our climate, the city will be launching a sustainability initiative that will help us solicit input and develop a climate action plan for the city.

³<http://www.mdclimatechange.us/>

Total Greenhouse Gas Emissions

The City of Annapolis produced the equivalent of 492,109 tons of carbon dioxide in 2006. (See Figure 1, Table 1)

Figure 1: Total CO₂ Emissions by Sector

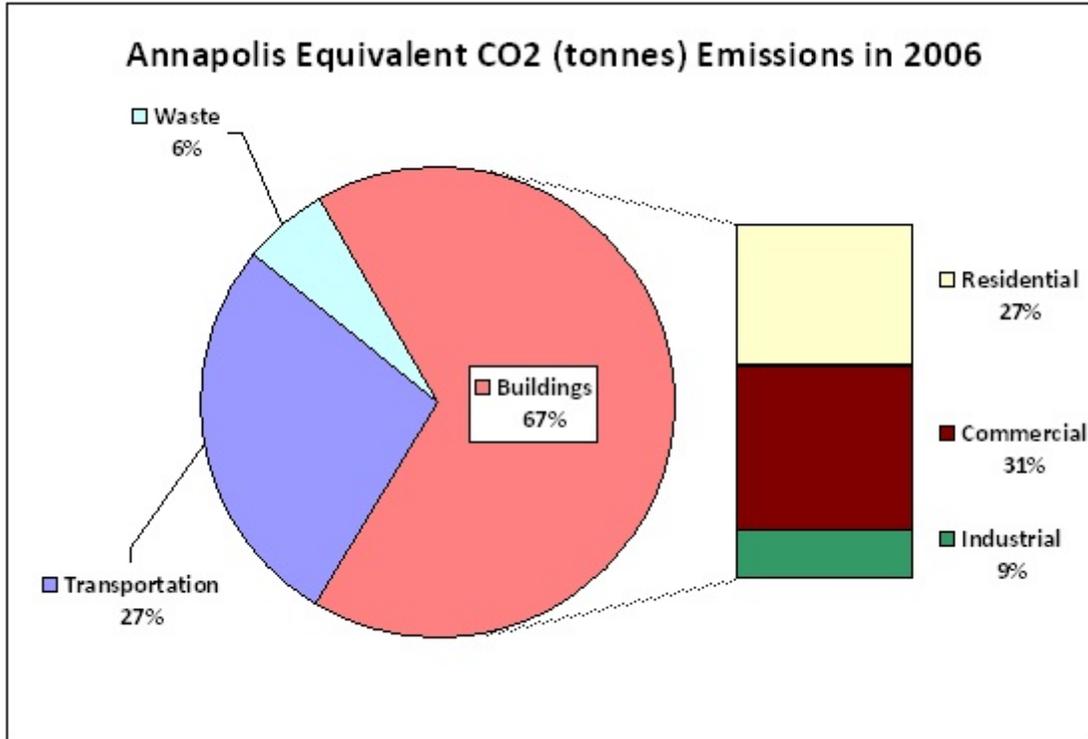


Table 1: Total CO₂ Emissions by Sector

Sector	%	Equiv CO ₂ (tons)
Transportation	27.2	133,895
Waste	5.8	28,541
Residential	26.7	131,591
Commercial	31.2	153,708
Industrial	9	44,374
Total	100	492,109

The largest CO₂ emitter in the city is the buildings, specifically, the commercial and residential buildings. Buildings are an indirect emitter of CO₂ since they do not release any emissions themselves, but they do draw their energy from the power plants who are direct emitters. For the mid-Atlantic region, our power plants are predominately fossil fuel-based, which is why buildings contribute so much to the City's carbon footprint. The second largest contributor to carbon emissions is the transportation sector. Our vehicles are direct emitters of CO₂, but are still dwarfed by the power plants.

Total Energy Consumption

A total of 4,473,967 MMBtu or 1,310,872 MWh of energy was used by the City of Annapolis in 2006 (See Figure 2 and Table 2).

Figure 2: Energy Used by Annapolis in 2006

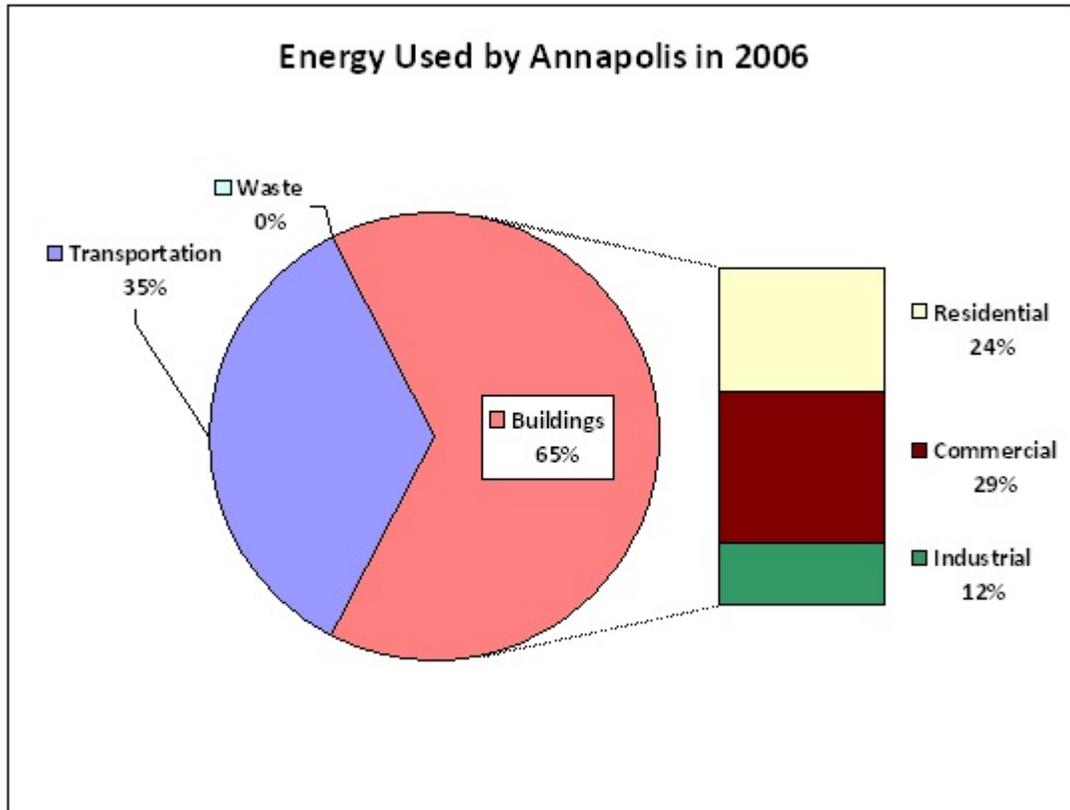


Table 2: Annapolis' Energy (MMBtu) Used in 2006

Sector	%	Energy (MMBtu)	Energy (MWh)
Transportation	34.9	1,561,602	457,550
Waste	0	--	--
Residential	24.1	1,080,222	316,505
Commercial	29.2	1,308,357	383,349
Industrial	11.7	523,785	153,469
Total	100	4,473,967	1,310,872

As with CO₂ emissions, the largest user of energy in the city is our buildings. Commercial buildings makes up 29% of the total energy use and residential makes up 24%. Buildings are likely the highest energy user because of they are very inefficient. This may have to do with the higher number of historic

buildings in the city. The results indicate that two policies, one increasing energy efficiency of our buildings, and another targeting the number and types of cars in our city, would be the most effective way to lower our energy demand.

BREAKDOWN BY SECTOR

ENERGY

BGE provided us with the total KWh used within the city limits, separated out by residential, commercial, and industrial sectors. Their methodology was to select the electric grids that are only within the city limits, excluding the naval academy.⁴ They were able to give us total KWh of electricity used by each sector, and also the total therms of natural gas used (Appendix D). No other fuel use data was able to be found for the sectors.

Residential

Annapolis' residential sector had a population of 36,408 in 2006, with 17,310 households. This information came from the city planning department, and was used by the CACP software to determine the per household energy use and emissions.⁵

Residential households make up 27% of the total CO₂e emissions for the City, contributing 131,591 tons of CO₂e, and using 316,505 MWh of energy (see Table 3). 5.5% of the CO₂e came from natural gas usage for heating purposes. On a per household level, each household produced 7.6 tons of CO₂e and used 18.3 MWh of energy in the baseline year.

Table 3

Total Residential	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MWh)
Electricity	104,912	21.6	189,978
Natural Gas	26,680	5.5	126,527
Subtotal	131,591	27.1	316,505

The carbon footprint for the residential sector can be lowered with measures that increase energy efficiency of the buildings, such as green building standards, and educate the residents about measures they can take personally, such as turning the heat down a few degrees. Natural gas consumption is likely due to heating, and can also be lowered through educational campaigns and implementing efficiency measures. Another way to lower the CO₂e would be for homeowners to get off the regional energy grid that is predominantly supplied by fossil fuels by installing renewable energy systems on their homes or getting power from a locally owned source of renewable energy; however, this alone would not lower the total energy use of the homes.

Annapolis has started to implement some of these measures, and passed green building legislation (O-56-07, see Appendix E) that effects both existing buildings and new construction.

⁴BGE data comes from Donna Reich, Annapolis BGE Liaison, Donna.P.Reich@BGE.com, (410)265-4689

⁵Indicator data from Sean O'Neal, Annapolis planning dept, (410)263-7961 and from citydata.com

Commercial

According to the city Department of Economic Affairs, in 2006 Annapolis' commercial sector had a floor space of approximately 7,600,000 square feet.⁶ The US Census data indicated that in the same year, Annapolis had 33,825 employees in that sector (see Table 4).⁷ We were unable to get an exact total of individual commercial businesses⁸, and instead worked with Annapolis' planning department to get the total number of commercial zoning plots according to the city's zoning overlay, which came out to be 678.⁹

Commercial energy use is 31.6% of the total CO₂e emissions of Annapolis, contributing 153,708 tons of CO₂e, and using 383,349 MWh of energy. Natural gas heating makes up 7.4 % of the total emissions.

Table 4

Total Commercial	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MWh)
Electricity	117,889	24.2	213,479
Natural Gas	35,819	7.4	169,870
Subtotal	153,708	31.6	383,349

Much like the residential sector, education and improving building efficiency can help to lower the total electricity use of the commercial sector. In many cases it may be financially easier and rewarding for commercial enterprises to take measures to get off the fossil fuel-based regional energy grid. Programs can also be implemented to foster energy efficiency and environmental competitiveness between commercial businesses.

⁶Commercial floor area is an extrapolation based on city demographic data from the Annapolis economic development department, Mike Miron, (410)263-7940.

⁷Commercial employees (includes industrial), based off economic development dept, which is based off US census data. The total is 33,825 for city, but that includes US Naval Academy, which employs ~2500 people. That 2500 is separated out of the total city employment since the inventory does not include the naval academy.

⁸Mike Miron from the city's Economic Development Department originally gave us an estimate of 900 commercial establishments, but that was deemed to be less accurate than going with the land use plots (see next note)

⁹Commercial establishments comes from the city planning department, Sean O'Neal, (410)263-7961, and is simply the total number of commercial plots according to the land use overlay for 2006. This isn't an exact number but is a more effective way to measure commercial establishments.

Industrial

We were able to get the total Industrial floor space of 513,496 square feet, from the city's economic development department.¹⁰ However, we were unable to get the total number of industrial establishments or the total number of employees in this sector. BGE was not forthcoming with disclosing who their 2-4 industrial customers were.

The total contribution of the Annapolis industrial sector is 9.1% of the total city CO₂e. The total CO₂e released by industry was 44,374 tons, and the total energy used was 153,469 MWh. Natural gas made up almost half of the industrial CO₂e mix (see Table 5).

Table 5

Total Industrial	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MWh)
Electricity	19,435	4	35,193
Natural Gas	24,940	5.1	118,276
Subtotal	44,374	9.1	153,469

More investigation is needed to determine what the few industries are in Annapolis, in order to determine what kind of effort should be taken on this sector. Currently, the total contribution of industry to the overall CO₂e released by the city is minimal, but it is the fourth largest source. Take into consideration that there are only 2-4 industries (according to BGE) in the City, and you can see that they are a large emitter of CO₂e on an individual bases compared to the other sectors. It is also unknown why natural gas makes up such a large component of the CO₂e emissions of this sector.

¹⁰Floor area data came from the department of economic development for the city, Mike Miron, (410)263-7940

TRANSPORTATION

The transportation sector uses Vehicle Miles Traveled (VMT) for each vehicle type and fuel type to calculate the total CO₂e emitted from vehicles within the city. A problem we encountered was that Annapolis does not monitor VMT or Average Annual Daily Traffic (AADT) for any of its roads. The only regional organization that had some limited AADT data for the city is Anne Arundel County. However, this data was not extensive enough to allow for us calculate VMT for the entire city. What we ended up doing is working with a city transportation planner, Kwaku Agyemang-Duah, to come up with our own methodology for arriving at an estimate for Annapolis' annual VMT.¹¹ Our basic calculation is this: (Number of households in Annapolis)*(Average motorized VMT per day per household)*(365 days)=17,310*32*365. We used 32 for the average motorized VMT per day per household, which comes from the "2001 Household Travel Survey: Baltimore Regional Analysis, August 2005," put out by the Baltimore Metropolitan Council. The total VMT was then entered into the model, and we used the CACP software's "Transportation Assistant" to come up with an estimated distribution amongst vehicle types and fuel types. A request has been submitted to the Maryland Vehicle Administration for a localized list of vehicle types registered in the city, along with any fuel type data they may have. In the meantime, the CACP national averages are being used.

Our methodology resulted in a total VMT of 202,180,800 miles traveled for 2006. When entered into the model, the transportation sector was shown to contribute 133,895 tons of CO₂e, which is 27.5% of the entire CO₂e emissions of Annapolis. Transportation used 457,550 MWh of energy in 2006. Gasoline made up 83% of the total fuel consumption according to the regional averages (see Table 6).

Table 6

Residential Transportation	Equiv CO2 (tons)	Equiv CO2 (%)	Energy (MWh)
Gasoline	110,590	22.7	378,880
Diesel	23,304	4.8	78,670
Subtotal	133,895	27.5	457,550

Our calculations are based off of a residential VMT from Baltimore, and is likely higher than the actual VMT for Annapolis. However, since we do not have an estimate for commercial or tourist traffic, this higher number may help to make up for that fact.

The majority of the transportation emissions come from gasoline-fueled vehicles. The easiest way for a city to cut transportation-related emissions is to enact programs to encourage people to drive less. That could mean increasing the city's transit infrastructure, ranging from the bus system to the bike trail system. Promoting more hybrids and alternative fuel vehicles would help, but would not give as much of a return as eliminating the vehicle all together.

¹¹Annapolis planning department, Kwaku Agyemang-Duah, Transportation Planner, (410)263-7961.

WASTE

Except for Annapolis public works, which collects residential refuse, bulk trash, and yard waste, most of the organizations we contacted didn't have an exact tonnage of waste produced. What they did offer are the total number of waste dumpsters they had, their size (yd³), and how often they were picked up. From there we used a formula to determine the equivalent tonnage of waste collected by the dumpsters. The formula we used was the following: (Yards of container)*(Total Annual Pickup frequency)*80/2000. The source of this information was Waste Management Corp. Commercial waste was calculated by getting the total number of commercial parcels according to a 2006 city land use overlay¹², splitting that number into historic district (246) and non historic district (432) parcels, and multiplying that by an estimated tons of waste produced per parcel (50 tons for outside historic district, 29 inside).¹³ Multi-family, residential waste had to be calculated in a similar manner, but was split into public (1104 units) and non-public multi-family (5400 units) housing units, and multiplied by an estimated 1.5 tons of waste per unit.¹⁴

There was 54,199 tons of waste produced in the City of Annapolis in 2006, contributing 28,540 tons of CO₂e (see Table 7). This makes up 5.7% of the total CO₂e produced in the city. Annapolis public works collected 1,924 tons of yard waste¹⁵, 1,219 tons of bulk trash¹⁶, and 10,990 tons of residential refuse in 2006¹⁷. Our estimate for the total amount of waste produced by the commercial sector in 2006 is 28,638 tons of waste, or 16,637 of CO₂e. 4,089 tons of the total Commercial CO₂e is from the historic district. The Maryland Department of General Services (DGS) manages many state buildings that are located within the city of Annapolis.¹⁸ Together, they all contribute 957 tons of waste, and 589 tons of CO₂e.¹⁹ Multi-family housing contributed 1.2% of the city's total CO₂e, with 5,813 tons of CO₂e. Public housing is included in the multi-family housing calculations, and contributed 986 tons of CO₂e. There are 10 Anne Arundel County public schools located within Annapolis, and they are producing 362 tons of

¹²From Annapolis planning dept, Sean O'Neal, 410-263-7961

¹³Based on a 2004 waste distribution estimate that 50% of a city's waste is from the commercial sector. From there a tons per business average was used for future calculations. This is from a city waste consultant, GBB (www.gbbinc.com), from Lois Clarke, (301)219-6989.

¹⁴Parcel and unit numbers came from City Dept of Planning, Sean O'Neal 410-263-7961 and from city waste consultant research, GBB (www.gbbinc.com). It was determined that 2006 data doesn't differ from 2007 housing unit data. The tons of waste per unit was calculated from 2004 GBB data estimate, from Lois Clarke, (301)219-6989.

¹⁵Comes from th Annapolis FY2008 report (2006 reported) <http://www.annapolis.gov/info.asp?page=11191>

¹⁶From Tracie Brown, City of Annapolis employee in public works.

¹⁷Comes from th Annapolis FY2008 report (2006 reported) <http://www.annapolis.gov/info.asp?page=11191>

¹⁸For a full list go to http://www.dgs.maryland.gov/Facilities/Anne_Arundel/index.html

¹⁹From the state "All-Star" recycling survey report by Maryland Department of the Environment. The waste distribution is adjusted to reflect a higher paper and food content. Contact Sam L. Cook with DGS: (410)260-2900.

waste²⁰ and 210 tons of CO₂e (See Appendix F for the school breakout). The final waste contributor was St. John’s College. In 2006 they had 103 tons of waste and 39 tons of CO₂e.

Table 7

Waste	Tons of waste	Destination	Equiv CO2 (tons)	Equiv CO2 (%)
Annapolis Yard Waste	1,924	Open dump	-838	-0.2
Bulk Trash	1,219	Managed landfill	-295	-0.1
Commercial - Outside Historic District	21,600	Managed landfill	12,548	2.6
Commercial - Inside Historic District	7,038	Managed landfill	4,089	0.8
Department of General Seviles (DGS)	957	Managed landfill	589	0.1
Non-public Multi-family Housing	8,308	Managed landfill	4,827	1
Public Multi-family housing	1,698	Managed landfill	986	0.2
Public Schools	362	Managed landfill	210	0
Residential Refuse	10,990	Managed landfill	6,385	1.3
St. Johns Refuse	67	Managed landfill	47	0
St. Johns Bulk	36	Managed landfill	-8	0
Subtotal	54,199		28,540	5.7

Waste may only contribute 6% of the city’s CO₂e emissions, but it’s easily reduced with effective recycling, composting, and free-cycle campaigns. All of those are also relatively cheap to enact. Further education associated with reducing consumption can also be helpful. Most of the waste inventoried was heading to one of the regional landfills—one in Millersville, Anne Arundel County, and the other is in Virginia with the waste shipped on freight from Annapolis Junction. Research indicated that neither of the landfills capture the released methane.

Annapolis has taken steps to reduce the amount of waste produced by passing O-27-07, an ordinance that is designed to promote the use of reusable, recyclable, and compostable materials (Appendix G).

²⁰Comes from Dan LaHart, Environmental Program Manager, Operations Division, Anne Arundel County Public Schools, DlaHart@AACPS.o0rg 410-360-0138.

APPENDIX A

R-44-O6: ICLEI Cities for Climate Protection Campaign Participation

1 **CITY COUNCIL OF THE CITY OF ANNAPOLIS**

2
3 **RESOLUTION NO. R-44-06**

4
5 **Introduced by Alderman Taylor**

6

LEGISLATIVE HISTORY			
First Reader:	Public Hearing:	Fiscal Impact Note:	120 Day Rule:
10/9/06			n/a
Referred to:	Meeting Date:	Action Taken:	

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14 **A RESOLUTION** concerning

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16 **ICLEI Cities for Climate Protection Campaign Participation**

17
18 **FOR** the purpose of approving the participation of the City of Annapolis in the
19 International Council for Local Environmental Initiatives' (ICLEI) Cities for Climate
20 Protection Campaign and that the City of Annapolis will undertake the Cities for
21 Climate Protection Campaign's five milestones to reduce both greenhouse gas and
22 air pollution emissions throughout the community.

23
24 **WHEREAS**, The City of Annapolis is a full member of ICLEI - Local Governments for
25 Sustainability; and

26
27 **WHEREAS**, ICLEI has initiated the Climate Protection Campaign and invites all of its
28 members to participate so that they may reduce energy consumption and
29 greenhouse gas emissions; and

30
31 **WHEREAS**, scientific consensus has developed that carbon dioxide and other
32 greenhouse gases released into the atmosphere have a profound effect on
33 the Earth's climate; and

34
35 **WHEREAS**, in 2006 the U. S. National Climatic Data Center confirmed clear evidence of
36 human influences on climate due to changes in greenhouse gases; and

37
38 **WHEREAS**, the U. S. Conference of Mayors endorsed the 2005 U. S. Mayors' Climate
39 Protection Agreement initiated by Seattle Mayor Nickels and signed by 238
40 mayors in the United States, including Annapolis', as of June 2006; and

41

1 **WHEREAS,** The Urban Environmental Accords adopted by local government delegates
2 during UN World Environment Day 2005's call for reduced emissions through
3 energy efficiency, land use and transportation planning, waste reduction,
4 wiser energy management; and
5

6 **WHEREAS,** in 2003, the American Geophysical Union adopted a statement noting that
7 human activities are increasingly altering the Earth's climate and that natural
8 influences cannot explain the rapid increase in near-surface temperatures
9 observed during the second half of the 20th century; and
10

11 **WHEREAS,** in 2001 the National Academy of Sciences reviewed and declared global
12 warming a real problem caused in part of the actions of humankind; and
13

14 **WHEREAS,** the 2001 Third Assessment Report from the International Panel on Climate
15 Change and the 2000 U. S. Global Change Research Program's First
16 National Assessment indicate that global warming has begun; and
17

18 **WHEREAS,** 162 countries including the United States pledged under the United States
19 pledged under the United Nations Framework Convention on climate Change
20 to reduce their greenhouse gas emissions; and
21

22 **WHEREAS,** energy consumption, specifically the burning of fossil fuels, accounts for
23 more than 80 percent of U. S. greenhouse gas emissions; and
24

25 **WHEREAS,** local government actions taken to reduce greenhouse gas emissions and
26 increase energy efficiency provide multiple local benefits by decreasing air
27 pollution, creating jobs, reducing energy expenditures, and saving money for
28 local government, its businesses, and its residents; and
29

30 **WHEREAS,** the Cities for Climate Protection Campaign sponsored by ICLEI - Local
31 Governments for Sustainability has invited the City of Annapolis to become
32 a partner in the Cities for Climate Protection Campaign;
33

34 **NOW THEREFORE, BE IT RESOLVED BY THE ANNAPOLIS CITY COUNCIL** that the
35 City of Annapolis, Maryland, will participate in the Cities for Climate Protection Campaign
36 and, as a participant, pledges to take a leadership role in promoting public awareness
37 about awareness about the causes and impacts of climate change.
38

39 **AND BE IT FURTHER RESOLVED BY THE ANNAPOLIS CITY COUNCIL** that the City
40 of Annapolis will undertake the Cities for Climate Protection Campaign's five milestones to
41 reduce both greenhouse gas and air pollution emissions throughout the community, and
42 specifically:

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- C Conduct a greenhouse gas emissions inventory and forecast to determine the source and quantity of greenhouse gas emissions in the jurisdiction;
- C Establish a greenhouse gas emissions reduction target;
- C Develop an action plan with both existing and future actions which when implemented will meet the local greenhouse gas reduction target;
- C Implement the action plan; and
- C Monitor and report progress; and

BE IT FINALLY RESOLVED that the City of Annapolis requests assistance from ICLEI's Cities for Climate Protection Campaign as it progresses through the milestones.

ADOPTED this 9th day of October, 2006.

ATTEST:

THE ANNAPOLIS CITY COUNCIL

Regina C. Watkins-Eldridge, CMC
City Clerk

BY: _____
ELLEN O. MOYER, MAYOR

APPENDIX B

R-38-O6: Recommendations of the City of Annapolis Energy Efficiency Task Force

1 **CITY COUNCIL OF THE CITY OF ANNAPOLIS**

2
3 **RESOLUTION NO. R-38-06**

4
5 **Introduced by Mayor Moyer**

LEGISLATIVE HISTORY			
First Reader:	Public Hearing:	Fiscal Impact Note:	120 Day Rule:
9/11/06			n/a
Referred to:	Meeting Date:	Action Taken:	

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13
14 **A RESOLUTION** concerning

15
16 **Recommendations of the City of Annapolis Energy Efficiency Task Force**

17
18 **FOR** the purpose of the City Council to adopt the recommendations of the Energy
19 Efficiency Task force to guide the energy policy of the City of Annapolis.

20
21 **WHEREAS,** the Annapolis City Council adopted R-31-05 on October 10, 2005, which
22 established the City of Annapolis Energy Efficiency Task Force to study the
23 application and recommend the implementation of energy efficient
24 standards for the city to reduce costs, reduce energy consumption, and to
25 reduce our reliance upon foreign petroleum; and

26
27 **WHEREAS,** the Energy Efficiency Task Force met for six consecutive months, gathered
28 information and discussed energy efficiency standards and their
29 implementation by the City government; and

30
31 **WHEREAS,** the Energy Efficiency Task Force developed recommendations for the City
32 to reduce costs, energy consumption and reliance upon petroleum.

33
34
35 **NOW THEREFORE BE IT RESOLVED BY THE ANNAPOLIS CITY COUNCIL** that the
36 following recommendations of the City of Annapolis Energy Efficiency Task Force are
37 hereby adopted which guide the energy policy of the City of Annapolis.

38
39 **Energy Efficiency Task Force Recommendations**

- 40
41 1. Comprehensive Municipal Energy Audit
- 42 a. Undertake a comprehensive energy audit of all public owned or leased facilities

1 b. Conduct a baseline emissions inventory and forecast. Based on energy
2 consumption and waste generation, the city calculates greenhouse gas emissions for a
3 base year (e.g., 2000) and for a forecast year. The inventory and forecast provide a
4 benchmark against which the city can measure progress.

5 c. Commit to 10% reduction in energy use of all public owned or leased facilities
6 within 5 years of establishing an emissions baseline and 15% by 2020.

7
8 **2. Energy Performance Contracting**

9 a. Enter into an agreement with an energy service company which identifies and
10 evaluates energy-saving opportunities and recommends a package of improvements which
11 are paid for through the resulting savings.

12
13 **3. Distributed Energy Resources**

14 a. Install on-site energy generation wherever practical (solar, wind, geothermal) for
15 every public facility. Energy generated on-site will be adequate to supply total energy
16 requirement (e.g., stop lights, area or street lights, bus shelters) or will be fed back into the
17 electrical grid to lower overall energy costs.

18 b. Public benefits: lower cost/kw; deferral of capital costs for construction of power
19 plants and substations; reduced net pollution emissions; stand-alone installations not
20 connected to the power grid are unaffected by power outages.

21
22 **4. Provide Leadership in Energy and Environmental Design (LEED) green building design**
23 **checklist and green building fact sheet for all private building permit applications to raise**
24 **awareness of green building standards in the private sector.**

25 a. "Green building" is a movement within building design and construction which
26 incorporates the following concepts: using natural resources efficiently; considering the
27 impact of buildings on the local, regional and global environment; reducing building footprint
28 size; allowing ecosystems to function naturally; conserving and reusing water; treating
29 storm water on-site; maximizing the use of local materials; optimizing energy performance
30 by installing energy efficient equipment and systems; optimizing climatic conditions through
31 site orientation and design; integrating natural day-lighting and ventilation; minimizing
32 construction waste by reducing, reusing and recycling materials during all phases of
33 construction and deconstruction, incorporating low VOC materials and design concepts that
34 lend to a healthy work environment.

35
36 **5. Adopt LEED building standards for all new public facilities and renovations of existing**
37 **public buildings with a minimum standard of Silver Certification.**

38 a. LEED standards define Silver, Gold and Platinum Certifications

39 b. Energy efficient buildings provide significant energy cost savings

40 c. Green buildings reduce waste management costs, air and water pollution.

41 d. Green buildings produce operating cost savings.

42 e. Green buildings provide improved and healthier working environments.

- 1 f. Widespread application of green building practices can produce economic
2 development potential by fostering new markets for green products and technologies
- 3 g. LEED saves time and resources by providing a comprehensive set of tools for
4 local application and use.
- 5 h. LEED avoids the need to establish local certification bodies.
- 6 i. LEED allows benchmarking with other LEED jurisdictions.
- 7
- 8 6. Apply existing green purchasing standards vigorously for all City departments.
- 9 a. Purchase only Energy Star equipment and appliances for City use.
- 10 b. Evaluate opportunities to increase pump efficiency in water and wastewater
11 systems.
- 12
- 13 7. Investigate incentives for the private sector to include green building standards in new
14 construction. For example:
- 15 a. Property tax credits
- 16 b. Reduced permit fees
- 17 c. Increased zoning density
- 18 d. Apply a fee/sq ft for non-green building projects that can be diverted to low
19 income housing, outreach education promoting green building, etc.
- 20
- 21 8. Education program
- 22 a. Provide for training of government staff in LEED methodology which can be
23 provided by the US Green Building Council, Green Building Institute, American Institute of
24 Architects, or other similar group.
- 25 b. Develop a green building outreach program for the professional building
26 community.
- 27
- 28 9. Transportation
- 29 a. Commit to purchasing hybrid, alternative energy source or other energy efficient
30 vehicles to account for a minimum of 25% of the city's fleet
- 31 b. Convert City vehicles to biodiesel wherever possible and establish a fueling
32 facility.
- 33 c. Developments that are required to submit traffic impact studies will include
34 impacts on the city's current transportation infrastructure and will provide mitigation such
35 as financial transit subsidies, promotion of car pooling and telecommuting, sale of transit
36 passes.
- 37 d. Annapolis Transit will identify the needs of residents within new development and
38 adjust routes accordingly.
- 39 e. Promote transportation options such as bicycle trails, commute trip reduction
40 programs, incentives for car pooling and public transit.
- 41 f. Explore water based transit options, such as water taxis and ferries.
- 42

1 10. Purchase green energy through regional purchasing agreements

2 a. Purchase 20% of the City's total energy needs from renewable sources by the
3 year 2020. Renewable energy sources are: solar, wind, geothermal, biomass, small hydro
4 power, and fuel cell.

5
6 11. Increase recycling rates in City operations and in the residential and commercial
7 communities.

8 a. Products made from recycled materials as opposed to virgin materials generally
9 require less energy for manufacture.

10 b. Reduced waste equates to a reduction in trips to the landfill which reduces vehicle
11 emissions.

12
13 12. Maintain healthy urban forests and promote tree planting to increase shading and to
14 absorb CO2.

15 a. Trees absorb carbon dioxide and discharge oxygen as part of their natural
16 growing process.

17 b. Shaded areas have lower temperatures, reducing the urban heat island effect
18 and the production of ground level ozone.

19 c. Increase the urban forest canopy to 50% of the City's land area by 2036.
20
21

22 **ADOPTED** this 9th day of October, 2006.
23
24

25 **ATTEST:**

THE ANNAPOLIS CITY COUNCIL

26
27
28 _____
29 **Regina C. Watkins-Eldridge, CMC**
30 **City Clerk**

BY: _____
ELLEN O. MOYER, MAYOR

APPENDIX C

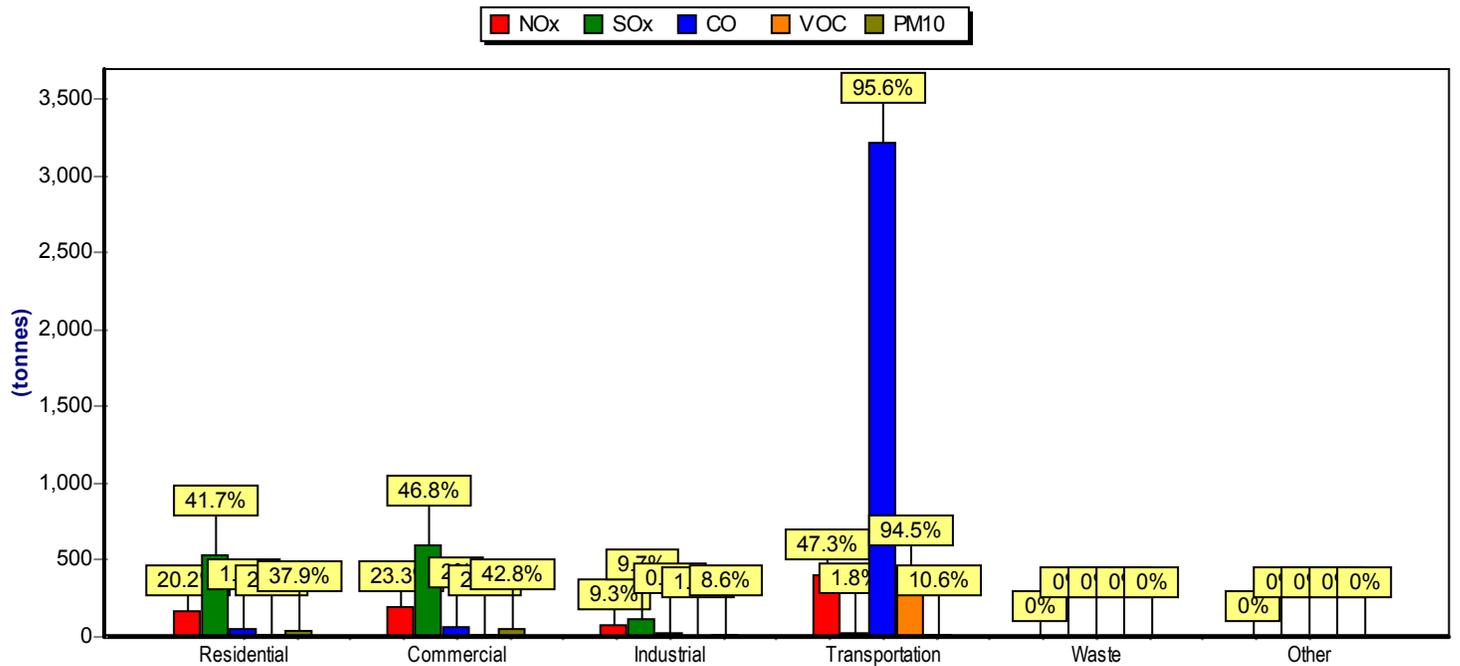
Community Criteria Air Pollutants Emissions in 2006: Summary Report

Annapolis

Community Criteria Air Pollutants Emissions in 2006

Summary Report

	NOx (lbs)	SOx (lbs)	CO (lbs)	VOC (lbs)	PM10 (lbs)
Residential	382,226	1,159,484	125,425	15,930	91,181
Commercial	441,714	1,303,549	145,041	18,775	102,946
Industrial	175,444	271,115	53,422	8,164	20,686
Transportation	896,301	49,086	7,089,864	732,910	25,522
Total	1,895,684	2,783,234	7,413,752	775,778	240,335



APPENDIX D
Energy use data provided by BGE

Electric					
	Accounts	Annual kWh	kWh/Account	% to total kWh	% to total Accts
<i>Residential</i>	16,701	189,977,991	11,375	43.31	87.19
<i>Small Commercial</i>	2,248	100,402,845	44,663	22.89	11.74
<i>Large Commercial</i>	203	113,076,212	557,026	25.78	1.06
<i>Industrial</i>	2	35,193,200	17,596,600	8.02	0.01
Total	19,154	438,650,248	22,901	100.00	100.00

Gas					
	Accounts	Annual ths	ths/Account	% to total ths	% to total Accts
<i>Residential</i>	6,834	4,318,332	632	30.51	85.43
<i>Small Commercial</i>	978	1,921,188	1,964	13.57	12.23
<i>Large Commercial</i>	184	3,876,409	21,067	27.39	2.30
<i>Industrial</i>	4	4,036,718	1,009,180	28.52	0.05
Total	8,000	14,152,647	1,769	100.00	100.00

APPENDIX E
O-56-07: Green Building Legislation

1 CITY COUNCIL OF THE CITY OF ANNAPOLIS

2
3 ORDINANCE NO. O-56-07 Amended

4 Introduced by Mayor Moyer
5
6

LEGISLATIVE HISTORY			
First Reader:	Public Hearing:	Fiscal Impact Note:	120 Day Rule:
12/10/07	1/28/08	2/20/08	4/9/07
Referred to:	Meeting Date:	Action Taken:	
Economic Matters	2/15/08	Favorable w/amendments	
Environmental Matters	2/26/08	Favorable w/amendment that is incorporated into Economic Matters	

7
8 **AN ORDINANCE** concerning

9
10 **Green Buildings**

11
12 **FOR** the purpose of requiring that certain new construction and major modifications to
13 various buildings and single family homes shall meet certain standards as
14 established by a rating organization such as the Green Building Council; defining
15 various terms; and all matters related to "green buildings".
16 * * * * *

17
18 **BY** adding new the following chapter to the Code of the City of Annapolis, 2007
19 Edition:
20 Chapter 17.14
21

22 **SECTION I: BE IT ESTABLISHED AND ORDAINED BY THE ANNAPOLIS CITY**
23 **COUNCIL** that the Code of the City of Annapolis shall read as follows:
24

25 **CHAPTER 17.14 GREEN BUILDINGS: ENERGY EFFICIENCY AND ENVIRONMENTAL**
26 **DESIGN**
27

28 **17.14.010 Policy.**
29

30 This chapter is intended to provide an integrated approach to the planning, design,
31 construction and operation of certain buildings and their surrounding landscape so as to
32 mitigate energy use and environmental impacts, and to promote sustainable development.
33

34 **17.14.020 Applicability.**
35

1 A. This article shall apply to applications for building and trades permits in the following
2 categories:

3
4 1. All applications for new construction of or major modifications to residential, non-
5 residential and commercial buildings of greater than 7,500 square feet of gross floor area;

6
7 2. All applications for new construction of or major modifications to public buildings
8 regardless of size;

9
10 3. All applications for new construction of or major modifications to single family dwellings,
11 regardless of size.

12
13 17.14.030 Definitions.

14
15 Department - The Department of Neighborhood and Environmental Programs

16
17 Director - The Director of the Department of Neighborhood and Environmental Programs

18
19 Green Building Council - The U.S. Green Building Council, an organization that has
20 developed and published the LEED rating system to measure the energy and
21 environmental performance of a building.

22
23 LEED - The series of Leadership in Energy and Environmental Design (LEED) rating
24 systems developed by the Green Building Council.

25
26 LEED accredited professional - Any person who has passed the LEED Professional
27 Accreditation Exam administered by the Green Building Council.

28
29 LEED certified-level - The lowest of the LEED rating systems.

30
31 LEED rating system - The particular LEED rating system that applies to a building.

32
33 LEED scorecard - The checklist developed by the Green Building Council for the purpose of
34 calculating a score on the LEED rating system.

35
36 LEED silver level rating - The second lowest of the LEED rating systems

37
38 Major modification – ~~Any~~ A structural modification to an existing building that alters greater
39 than fifty per cent of the gross floor area ~~resulting in~~ or results in an increase of greater
40 than ~~twenty~~ fifty per cent of the gross floor area or where the number of parking spaces is
41 increased by more than twenty per cent.
42

1 New construction - A new stand-alone building or any major modification to an existing
2 building. New construction does not include any change to an existing portion of a building.

3
4 Non-residential building - A building not used as a dwelling. A non-residential building does
5 not include: a) accessory building or structure; b) parking garage that is not heated or
6 cooled; c) any other building characterized as a miscellaneous building in the ICC
7 International Building Code.

8
9 Public building - Any building or facility owned, leased or funded at a level of at least thirty
10 percent by municipal government including, but not limited to, water and wastewater
11 treatment plants, water and wastewater pumping stations, garage or depot. State and
12 federal buildings are excluded from this category as they are not subject to local
13 government regulations.

14
15 17.14.040 Standards and Requirements.

16
17 A. Any new construction of or major modification to a ~~residential, non-residential or~~
18 ~~commercial or mixed use~~ building of greater than 7,500 square feet of gross floor area must
19 achieve:

20
21 1. A certified-level rating in the appropriate LEED rating system, as certified by the Green
22 Building Council; or

23
24 2. A certified-level rating in the appropriate LEED rating system as verified by the Director
25 or a qualified person approved by the Director; or

26
27 3. Energy and environmental design standards that the Director identifies as equivalent to
28 certified-level rating in the appropriate LEED rating system, as verified by the Director or a
29 qualified person approved by the Director.

30
31 B. Any new construction of or major modification to a public building, regardless of size,
32 must achieve, at a minimum:

33
34 1. A silver level rating in the appropriate LEED rating system, as certified by the Green
35 Building Council; or

36
37 2. A silver level rating in the appropriate LEED rating system as verified by the Director or
38 a qualified person approved by the Director; or

39
40 3. Energy and environmental design standards that the Director identifies as equivalent to
41 a silver level rating in the appropriate LEED rating system, as verified by the Director or a
42 qualified person approved by the Director.

43

1 C. Any new construction of or major modification to a five or more single family home,
2 regardless of size, or attached homes on one lot or as a subdivision, and any single family
3 home in excess of 3,250 square feet in size, must achieve:
4

5 1. A certified-level rating in the appropriate LEED rating system as certified by the Green
6 Building Council; or

7
8 2. A certified-level rating in the appropriate LEED rating system as verified by the Director
9 or a qualified person approved by the Director; or

10
11 3. Energy and environmental design standards that the Director identifies as equivalent to
12 a certified-level rating in the appropriate LEED rating system, as verified by the Director or
13 a qualified person approved by the Director.
14

15 **17.14.050 Site Plans.**

16
17 A. Applications

18
19 1. Those applications defined in Section 17.14.020 that require Site Design Review shall
20 provide application information as required by City Code Chapter 21.22, Site Plan Design
21 Review. In addition, applicants for Site Design Review shall provide:
22

23 a. Design plans, including a LEED scorecard, that shows how the building's surrounding
24 landscape will comply with the applicable standard under Section 17.14.040; and

25
26 b. LEED scorecard showing the LEED points that a building will obtain; and

27
28 c. Written explanation of how the building and surrounding landscape will obtain the LEED
29 points identified in the LEED scorecard.
30

31 2. Applications for a building permit must submit to the Department:
32

33 a. Design plans for the building and landscape that are likely to achieve the applicable
34 standard under Section 17.14.040 as certified by a LEED accredited professional or
35 otherwise approved by the Green Building Council or verified by the Director or a qualified
36 person designated by the Department; and

37
38 b. A LEED scorecard and any other document or information the Department finds
39 necessary to decide whether the building and landscape will achieve the applicable
40 standard under Section 17.14.040.
41

42 B. Review and Approval
43

1 1. The Department shall require compliance with Section 17.14.040 as a condition of any
2 building permit issued for construction as defined in Section 17.14.020;

3
4 2. The Department shall not issue a final certificate of use and occupancy for any
5 construction as defined in Section 17.14.020 unless it finds that the building has achieved
6 the applicable standard under Section 17.14.040. For those buildings seeking any green
7 building certification, the applicant must submit all documentation that a green building was
8 designed and constructed and that an application for any green building certification was
9 submitted to the appropriate green building certifying body as a condition of the issue of a
10 final certificate of use and occupancy.

11
12 17.14.060 Variance. There are no variances to the requirements of this chapter, except as
13 defined in Chapter 21.22.120, Site Design Plan Review.

14
15 17.14.070 Appeal. Appeals of a decision by the Director pertaining to this chapter shall be
16 made to the Building Board of Appeals.

17
18 **SECTION II: AND BE IT FURTHER ESTABLISHED AND ORDAINED BY THE**
19 **ANNAPOLIS CITY COUNCIL** that this Ordinance shall take effect on the date of adoption
20 January 1, 2009, for all projects not already in the site design review process, and
21 July 1, 2009 for residential structures.

22
23 **ADOPTED** this 10th day of March 2008.

24
25 **ATTEST:**

THE ANNAPOLIS CITY COUNCIL

26
27
28
29 Regina C. Watkins-Eldridge, CMC
30 **City Clerk**

BY: _____
ELLEN O. MOYER, MAYOR

31
32
33

<p style="text-align: center;">EXPLANATION:</p> <p style="text-align: center;">Highlighting indicates matter added to existing law. Strikeout indicates matter deleted from existing law. <u>Underlining indicates amendments.</u></p>
--

APPENDIX F
Waste breakout by school

Location	# Containers	Size (CuYd)	Annual Pickups	Tons
J. Albert Adams	1.00	4.00	52.00	8.32
Annapolis ES	1.00	6.00	156.00	37.44
Bates Middle	3.00	6.00	156.00	112.32
Eastport ES	1.00	6.00	104.00	24.96
Georgetown East ES	1.00	6.00	156.00	37.44
Germantown ES	1.00	6.00	156.00	37.44
Mills Parole ES	1.00	6.00	104.00	24.96
Pheonix Center	1.00	6.00	104.00	24.96
Tyler Heights ES	1.00	6.00	156.00	37.44
West Annapolis ES	1.00	4.00	104.00	16.64
				361.92

APPENDIX G

**O-27-07: City Ordinance promoting reusable, recyclable,
and compostable materials**

1 **CITY COUNCIL OF THE CITY OF ANNAPOLIS**

2
3 **ORDINANCE NO. O-27-07RevisedAmended**

4
5 **Introduced by Mayor Moyer**
6 **Co-Sponsored by Alderman Israel**
7 **Alderman Finlayson**
8 **Alderman Arnett**
9 **Alderman Cordle**
10 **Alderman Shropshire**
11

LEGISLATIVE HISTORY			
First Reader:	Public Hearing:	Fiscal Impact Note:	120 Day Rule:
7/9/07	7/23/07 12/17/07 2/11/08	8/20/07	11/6/07
Referred to:	Meeting Date:	Action Taken:	
Economic Matters	2/15/08	Favorable w/amendments Amendments by Stankivic and Shropshire	

12
13 **AN ORDINANCE** concerning

14
15 **The Promotion of Reusable, Recyclable and Compostable Materials**

16
17 **FOR** the purpose of establishing that the goal of the City is to encourage residents and
18 business owners to use reusable and recyclable materials and to purchase goods
19 from companies that practice energy use reduction and sequestration of carbon
20 dioxide wherever possible; to establish an Environmental Review Committee to
21 review existing practices of the City to assure that the its policies and procedures
22 foster the use of materials that are compostable, recyclable, and reusable, to assist
23 the various City offices to ensure that contracting procedures do not discriminate
24 against reusable, recycled, or environmentally preferable products without sufficient
25 justification, to evaluate environmentally preferable products to determine the extent
26 to which they may be used by the City and its contractors, to review and revise
27 contracting procedures to maximize the specification of designated environmentally
28 preferable products where practicable, to facilitate data collection on purchases of
29 designated environmentally preferable products, and to monitor compliance with a
30 number of environmentally friendly standards and practices; and all matters related
31 to the use by the City of environmentally friendly standards and practices.
32

33 * * * * *

34
35 **BY** adding the following new chapter to the Code of the City of Annapolis, 2007 Edition:

1 Section 2.48.350

2
3 **SECTION I: BE IT ESTABLISHED AND ORDAINED BY THE ANNAPOLIS CITY**
4 **COUNCIL** that the Code of the City of Annapolis shall read as follows:

5
6 Section 2.48.350 Environmental Review Committee.

7
8 A. The goal of the City is to lead by example so as to encourage residents and business
9 owners to use reusable and recyclable materials and to purchase goods from companies
10 that practice energy use reduction and sequestration of carbon dioxide.

11 B. In furtherance of this goal, there is hereby established an Environmental Review
12 Committee within the municipal government. The Committee consists of the Directors of
13 the Departments of Neighborhood and Environmental Programs (DNEP), Public Works,
14 Central Services, and Recreation and Parks. The Director of DNEP shall serve as the
15 chair.

16 C. As a minimum, the Committee shall:

17 1. Review existing practices of the City to assure that its policies and procedures foster the
18 use of materials that are compostable, recyclable, and reusable.

19 2. Assess the effectiveness of the voluntary environmental reusable bag program.

20 3. Assess the value of bans and/or fees on materials in furtherance of the City's goals.

21 4. Develop a plan for distribution of re-useable bags as part of and consistent with the
22 City's recycling plan as defined in Chapter 10.18 of the Annapolis City Code.

23 5. Assist the various City offices to ensure that contracting procedures do not discriminate
24 against reusable, recycled, or environmentally preferable products without sufficient
25 justification.

26 6. Evaluate environmentally preferable products to determine the extent to which they may
27 be used by the City and its contractors.

28 7. Review and revise contracting procedures to maximize the specification of designated
29 environmentally preferable products where available.

30 8. Following ~~implementation~~ installation of computer ~~systems~~ software capable of data
31 gathering for such purposes, facilitate data collection on purchases of designated
32 environmentally preferable products by the City and its contractors and report the data to
33 the City Council by July 31 of each year.

34 9. Prior to fiscal year 2009, the Committee shall:

35 a. Begin issuing to all City organizational elements purchasing specifications that comply
36 with U.S. Environmental Protection Agency Comprehensive Procurement Guidelines for
37 products. Recovered Materials Advisory Notices (RMAN) shall be used as a reference for
38 determining the recycled content specifications for these products. Third party certifications,
39 such as Energy Star, Eco Logo and Green Seal, shall also be acceptable to identify
40 preferred products.

41 b. Monitor the implementation of the following:

42 (1) To the extent available , all printing and copy paper products shall consist of a minimum
43 of 30% post-consumer recycled fiber.

- 1 (2) All janitorial paper products and plastic garbage bags shall consist of a minimum of 50%
2 post-consumer content.
- 3 (3) A ten percent price preference for processed chlorine-free paper shall be applied to
4 (100 percent) of photocopy-grade and janitorial paper purchases.
- 5 (4) Returning used toner cartridges for remanufacture and purchase re-manufactured toner
6 cartridges when practicable.
- 7 (5) ~~To the extent practicable,~~ Where available, no janitorial cleaning or disinfecting products
8 shall contain ingredients that are identified by United States Environmental Protection
9 Agency or the National Institute for Occupational Safety and Health as carcinogens,
10 mutagens, or teratogens.
- 11 (6) Phase out the use of chloroflourocarbon containing refrigerants, solvents and other
12 products when without risk of voiding manufacturers' warranties on the equipment in which
13 it is applied.
- 14 (7) All surfactants shall meet EPA standards as "readily biodegradable". ~~Where~~
15 ~~practicable,~~ No detergents shall contain phosphates.
- 16 (8) The City shall procure wood products that originate only from managed, recycled or
17 sustainable wood product operations.
- 18 (9) ~~Where available,~~ Purchased or leased electronic equipment including photocopiers,
19 computers, printers, lighting systems, HVAC, kitchen and laundering appliances, and
20 energy management systems must meet U.S. Environmental Protection Agency (EPA) or
21 U.S. Department of Energy (DOE) energy efficiency standards. Where applicable, the
22 energy efficiency function must remain enabled on all energy efficient equipment. As part
23 of any purchase or lease agreement for electronic equipment, a vendor must supply life
24 cycle costs for each item.
- 25 (10) All motor oil shall contain a minimum 25 percent re-refined base stock, and shall be
26 used only when without risk of voiding manufacturers' warranties on the equipment in
27 which it is applied. All re-refined oil must be American Petroleum Institute certified.
- 28 (11) All motor vehicles operated by the City shall use recycled propylene glycol antifreeze
29 where practicable, and shall be used only when without risk of voiding manufacturers'
30 warranties on the equipment in which it is applied.
- 31 (12) Paint purchased by the City or its contractors shall contain the minimum amount
32 necessary of volatile organic compounds, and shall contain maximum recycled content
33 where available.
- 34 (13) The City shall implement an integrated pest management program for pest control.
35 Any chemicals used to eliminate or deter insect pests and undesirable vegetation shall be
36 the most readily and completely biodegradable product available for the given application,
37 and shall be applied in a manner that is least likely to come into contact with humans and
38 any other animals for which treatment is not intended.
- 39 (14) All construction and renovation ~~projects performed or~~ at least thirty percent funded by
40 the City shall incorporate Silver LEED "green" building practices;
- 41 (15) The City shall give preference to products that are produced and are within a
42 reasonable geographic distance such that transportation costs, energy use and carbon
43 dioxide generation do not outweigh the benefits of lower product costs.

1 (16) All departments, offices, and agencies shall ensure that they and their
2 contractors/consultants use double-sided copying. All photocopiers purchased by the City
3 following adoption of this policy are required to be capable of double-sided copying when
4 the equipment has the capability to copy double-sided.

5 (17) The City shall reduce or eliminate its use of products that contribute to the formation
6 of dioxin and furan compounds.

7 D. The following are environmentally preferred products:

8 1. Compostable and vegetative products;

9 2. Horticultural mulch made with recycled land clearing and other wood debris, but
10 avoiding the use of non-sterile mulch which may contain non-native plant species;

11 3. Construction materials made with recycled cement concrete, wood, glass or asphalt;

12 4. Alternative fuels and vehicles and rolling stock that utilize same including, but not limited
13 to, electric, hybrid, compressed natural gas, hydro-diesel, hydrogen, biodiesel and ethanol.

14 When comparing costs of alternative vs. conventional fuels and vehicles, the city shall give
15 preference to alternative fuels and vehicles if their costs are no more than 10 per cent
16 higher than conventional products;

17 5. Cement and asphalt concrete containing glass cullet, recycled fiber or plastic, tire or
18 rubber;

19 6. Lubricating oil and hydraulic oil with re-refined oil content;

20 7. Recycled plastic products;

21 8. Remanufactured products made from recycled tire rubber, including rubber mats and
22 play field surfaces;

23 9. Low wattage/high efficiency lighting fixtures, including but not limited to traffic signals,
24 crosswalks, street lights and all interior and exterior building fixtures, including fixed ballast
25 fluorescent fixtures and motion sensitive switches.;

26 10. Solar powered traffic signals, traffic signs, street lights and buildings wherever
27 available;

28 11. Remanufactured laser printer toner cartridges; and

29 12. Other products as designated by the Mayor and/or the Mayor's designee, the Task
30 Force and/or Coordinator.

31 13. No fertilizer with phosphorous shall be used on any land owned by the City of
32 Annapolis, whether such land is located within or outside of the City's boundaries, except
33 where a soil test determines that the soil is deficient.

34
35 E. The Environmental Review Committee will formulate a plan by May 31, 2008, to promote
36 the use of reusable shopping bags in the City of Annapolis. It will establish a goal of a
37 40 percent reduction in the use of plastic and paper checkout bags in large retail chain
38 stores by May 31, 2009.

39
40 ~~E.~~ F. Nothing contained in the policy of this section shall be construed as requiring a
41 department or contractor to procure products that do not perform adequately for their
42 intended use, exclude adequate competition, or are not available at a reasonable price in a

1 reasonable period of time. The city shall give preference to any environmentally preferable
2 products if their costs are no more than 10 per cent higher than conventional products.

3
4 F. G. One year from adoption of this ordinance, the Environmental Review Commission will
5 evaluate the effectiveness of the internal and voluntary programs for reusable materials
6 and make recommendations in furtherance of these efforts for consideration by the Mayor
7 and City Council.

8
9 **SECTION II: AND BE IT FURTHER ESTABLISHED AND ORDAINED BY THE**
10 **ANNAPOLIS CITY COUNCIL** that this Ordinance shall take effect on the date of adoption.

11
12 **ADOPTED** this 25th day of February, 2008.

13
14 **ATTEST:**

THE ANNAPOLIS CITY COUNCIL

15
16
17 _____
18 **Regina C. Watkins-Eldridge, CMC**
19 **City Clerk**

BY: _____
ELLEN O. MOYER, MAYOR

20
21

<p style="text-align: center;">EXPLANATION:</p> <p style="text-align: center;">Highlighting indicates matter added to existing law. Strikeout indicates matter deleted from existing law. <u>Underlining indicates amendments.</u></p>
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