

City of Martinsville

Environmental Challenges

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Green Committee
October 13, 2009

Green Committee

- Meetings of the Green Committee
 - March 30, 2009
 - April 20, 2009
 - May 18, 2009
 - May 29, 2009 – Field day to Guilford County - Recycling
 - June 1, 2009 – Meeting with the Virginia DEQ – Office Pollution Prevention
 - July 27, 2009
 - August 10, 2009
 - September 2, 2009
 - Plethora of ideas, discussions and actions.
 - Can recycling at schools (Containers in place)
 - Preliminary carbon footprint based of City electrical usage
 - Business recycling questionnaire
 - Conservation easements
 - Increased usage of resident recycling containers (~1,400 tons recycled by City in 2008)
 - Community gardens
 - Recycling cost savings and cost avoidances to City (asphalt \$12M: wood waste \$29M)
 - LED traffic light
 - Mobile traffic and traffic light patterns
 - Solar power potential – broad and selected use
 - Wind power potential
 - Environmental actions by other city governments
 - Green Tips – Martinsville Bulletin (Public Outreach and Awareness)

Green Committee

➤ Consensus

- ❖ **Being green is no longer an option**
- ❖ **Need to start picking low-hanging fruit**
- ❖ **Two choices going forward**
 - ✓ **PROACTIVE**
 - ✓ **REACTIVE**

➤ **PROACTIVE – Saves money and wisely uses time to set strategy**

➤ **REACTIVE – Costs money and wastes time**

Environmental Stewardship, Sustainability, and Leadership

- Earth's resources are finite
- Earth's human population is increasing daily

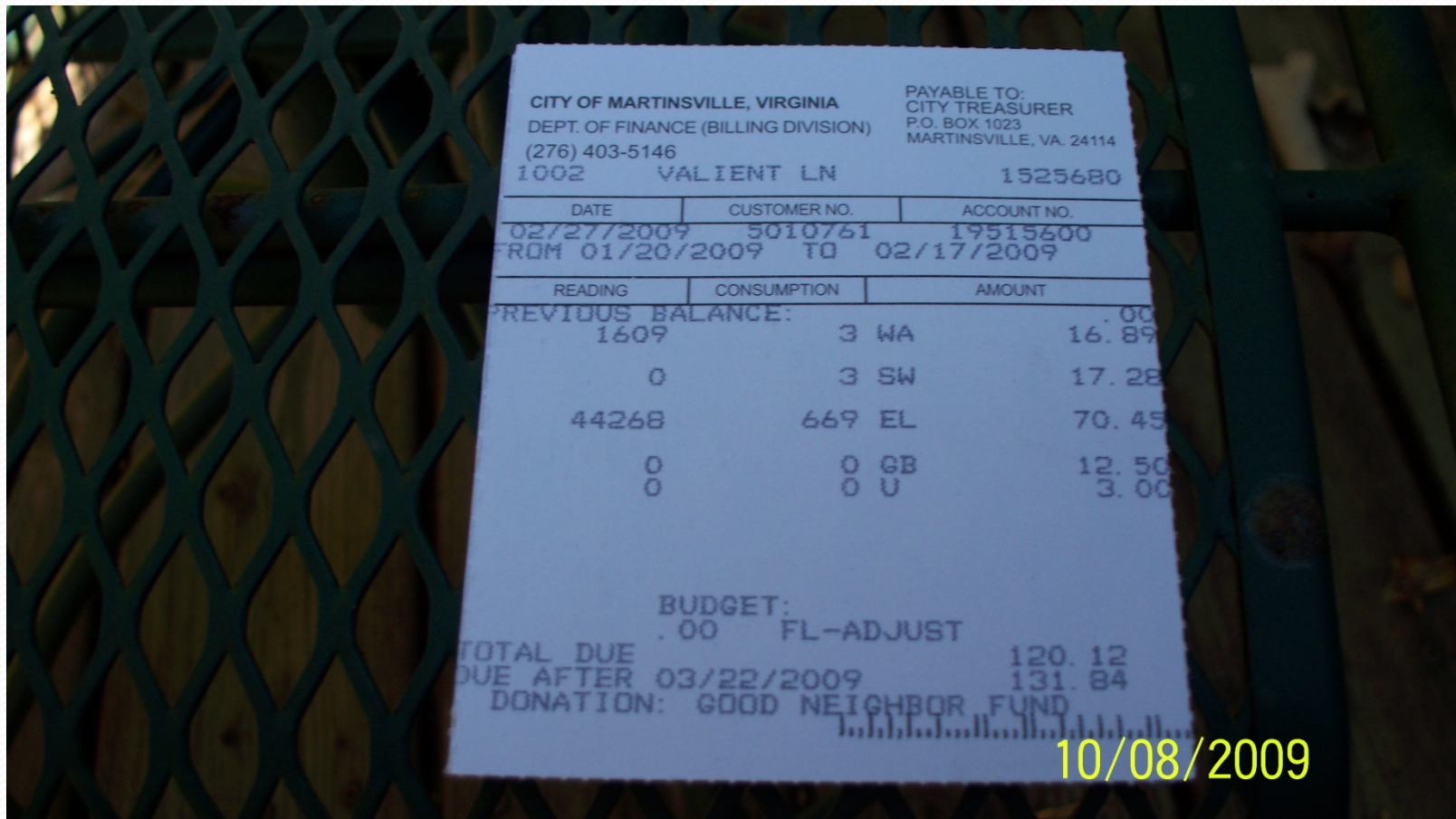
<u>Decade</u>	<u>Population</u>	<u>Growth Rate</u>
1950	2.556 billion	18.9 %
1960	3.039 billion	22.0 %
1970	3.707 billion	20.2 %
1980	4.454 billion	18.5 %
1990	5.279 billion	15.2 %
2000	6.083 billion	12.6 %
2010 (projected)	6.848 billion	10.7 %
2050 (projected)	9.347 billion	-

- Therefore - More people daily demanding the use and access to, finite and static resources

Environmental Basics

- How resources are managed and used- sustainability
- The reduction and minimization of environmental impacts from the use of resources

Sustainable Resources Recognize This?



Water and Sewer

<u>YEAR</u>	<u>Gallons Used</u>	<u>Cost</u>	<u>% Increase/Decrease</u>
March 1994	4,000	\$10.98	-
March 1995	4,000	\$10.98	0 %
March 1996	4,000	\$10.98	0 %
March 1997	4,000	\$10.98	0 %
March 1998	4,000	\$12.70	15.66 %
March 1999	4,000	\$12.70	0 %
March 2000	4,000	\$12.70	0 %
March 2001	4,000	\$16.30	28.35 %
March 2002	4,000	\$18.98	16.44 %
March 2003	4,000	\$18.98	0 %
March 2004	4,000	\$18.98	0 %
March 2005	4,000	\$18.98	0 %
March 2006	4,000	\$22.78	20.02 %
March 2007	4,000	\$34.17	50.00 %
March 2008	4,000	\$34.17	0 %
March 2009	4,000	\$34.17	0 %

Electricity

<u>YEAR</u>	<u>Kilowatts Used</u>	<u>Cost</u>	<u>% Increase/Decrease</u>
March 1994	1249	\$0.05965	-
March 1995	1229	\$0.05985	0.33 %
March 1996	1226	\$0.05989	0.07 %
March 1997	832	\$0.06513	8.75 %
March 1998	883	\$0.06470	(0.66 %)
March 1999	827	\$0.06518	0.74 %
March 2000	878	\$0.06474	(0.68 %)
March 2001	786	\$0.06556	1.27 %
March 2002	759	\$0.06585	0.44 %
March 2003	551	\$0.06893	4.68 %
March 2004	666	\$0.06698	(2.83 %)
March 2005	736	\$0.07272	8.57 %
March 2006	698	\$0.09519	30.90 %
March 2007	774	\$0.10333	8.55 %
March 2008	648	\$0.10579	2.38 %
March 2009	622	\$0.10642	0.60 %

Garbage

<u>Year</u>	<u>Gallons Placed at Curb</u>	<u>Cost</u>	<u>% Increase/Decrease</u>
March 1994	75 gallons	\$5.00	-
March 1995	75 gallons	\$6.00	20.0 %
March 1996	75 gallons	\$6.00	0.0 %
March 1997	75 gallons	\$6.00	0.0 %
March 1998	75 gallons	\$7.50	25.0 %
March 1999	60 gallons	\$7.50	0.0 %
March 2000	60 gallons	\$7.50	0.0 %
March 2001	60 gallons	\$7.50	0.0 %
March 2002	60 gallons	\$7.50	0.0 %
March 2003	60 gallons	\$7.50	0.0 %
March 2004	45 gallons	\$7.50	0.0 %
March 2005	45 gallons	\$9.50	26.7 %
March 2006	45 gallons	\$11.50	21.1 %
March 2007	45 gallons	\$12.50	8.7 %
March 2008	30 gallons	\$12.50	0.0 %
March 2009	30 gallons	\$12.50	0.0 %

Utility Tax

<u>Year</u>	<u>Cost</u>	<u>% Increase/Decrease</u>
March 1994	\$3.00	-
March 1995	\$3.00	0.0 %
March 1996	\$3.00	0.0 %
March 1997	\$3.00	0.0 %
March 1998	\$3.00	0.0 %
March 1999	\$3.00	0.0 %
March 2000	\$3.00	0.0 %
March 2001	\$3.00	0.0 %
March 2002	\$3.00	0.0 %
March 2003	\$3.00	0.0 %
March 2004	\$3.00	0.0 %
March 2005	\$3.00	0.0 %
March 2006	\$3.00	0.0 %
March 2007	\$3.00	0.0 %
March 2008	\$3.00	0.0 %
March 2009	\$3.00	0.0 %

1994 to 2009

➤ Water and Sewer

✓ Cost increased 311.2 % - Usage remained constant

➤ Electricity

✓ Cost increased 78.4 % - Usage decreased 50%

➤ Garbage

✓ Cost increased 250.0 % - Usage decreased 60%

➤ Utility Tax

✓ 0.0 % increase

1994 to 2009

- March 1994 actual cost– \$93.48
- In 2009 dollars - \$182.58
- \$89.10 increase in dollars
- 95.3 percent increase in cost
- While usage remained constant
or decreased

1994 to 2009

➤ Major cost drivers

- ✓ Capacity
- ✓ Fuel Costs
- ✓ Environmental Regulations
- ✓ Energy deregulation
- ✓ Shift to global economy

2009 - Forward

- Water and Sewer Costs - ???
- Electricity Costs - ???
- Garbage Costs - ???
- Consensus that these costs will rise
- Question becomes
 - How much will costs rise?
 - Over what period of time?
 - **All hope is not lost-we can have a significant impact**

2009 - Forward

➤ Major cost drivers

- ✓ Capacity utilization – leveraging resources
- ✓ System inefficiencies
- ✓ Cost of fuel (oil)
- ✓ Environmental Regulations
- ✓ Greater shift to global economies

What should worry you and keep you awake at night

- Air emissions (electricity, water/sewer, landfill, other)
 - ✓ Stationary sources – emissions from sources within city boundaries
 - ✓ Stationary sources - emissions from sources outside city boundaries
 - ❖ Largest City contributor – Electricity purchased from AEP
 - ✓ Mobile Sources – Government and Private
 - ✓ Greenhouse Gases
 - ❖ Total for all businesses, government, and residents located in the geographical boundary of the City of Martinsville
 - ✓ Carbon Footprint (CAP and TRADE)
 - ❖ Impact on the geographical boundary of the City of Martinsville

What should worry you and keep you awake at night

➤ Water and Sewer

- ✓ Future demand and usage
- ✓ Restricted use
- ✓ Rationing
- ✓ Storm water contamination from all city property to surrounding creeks and the Smith River
- ✓ Increased environmental regulations
- ✓ Environmental impacts
- ✓ Antiquated systems
- ✓ Efficient use of capacity

What should worry you and keep you awake at night

➤ Waste

- ✓ Hazardous
 - ❖ Batteries, Paints, Florescence Light Bulbs, Electronics, Oils/Greases, Appliances, Etc.
 - ❑ Cost to remediate
 - ❖ Increased environmental regulations
- ✓ Non- Hazardous
 - ❖ General Garbage and Trash today – ?? Tomorrow ??
 - ❑ Increasing cost to dispose
 - ❖ Increased environmental regulations

What should worry you and keep you awake at night

➤ Electricity

- ✓ Cost, cost, cost, and cost
- ✓ Availability – rationing
- ✓ Uninterrupted supply
- ✓ Future demand and usage
- ✓ Waste and inefficiency
- ✓ Alternative sources
- ✓ Environmental regulations

The 800 Pound Gorilla

- Beginning January 2010, the U.S. EPA will require approximately 10,000 facilities to report GHG emissions. EPA estimates 37% of total U.S. GHG emissions result from the provision and use of goods produced domestically. (cradle to consumer to grave)
- In August and September 2009, thirteen states announced twenty-five stricter changes in environmental regulations. Three states (CA, MI, PA) strengthened recycling statutes.
- Nineteen states now require special handling and disposal of electronic waste.

The Gorilla's Brother

- On October 1, 2009, it became illegal for plastic bottles to find their way into North Carolina landfills.
- On October 1, 2009, it became illegal for wooden pallets and oil filters to find their way into North Carolina landfills.
- It is illegal for businesses in Lexington, North Carolina to allow aluminum cans in trash destined for a landfill.
- The horizon ----- ??? to specifics.....in general.... expect a lot more restriction and regulation.

Garbage to Gold

- San Jose, CA – Los Angeles, CA – Boulder, CO have set zero waste programs. Los Angeles is already at 65% recyclable/reuse with a goal of 90% by 2025.
- In 2008, the top 100 largest recycling companies in the United States and Canada:
 - Had a combined recycling revenue of \$29,907,000,000 or \$82,000,000 per day (24/7/365)
 - Recycled 87,930,400 TONS of waste or 240,905 TONS per day (24/7/365)
 - Employed 35,182 people (At \$30,000 per person = +\$1,000,000,000 wages and benefits)

2009 Forward

- General Garbage and Trash
 - Should we consider a five year plan to convert the current garbage transfer station into an Asset Recovery Operation? (recycling)
 - Should we consider a mandatory plan for recycling of papers, cardboards, plastics, cans/metals, and glass at all City facilities? This would drive action and opportunity downward to business and residents. Lead by example
 - Should we consider partnering with business to increase recyclable streams and commodity values
 - Should we consider a City of Martinsville written commitment to zero landfill waste by 2035?

2009 Forward

➤ Electricity

- Should we consider a mandatory 2% annual reduction in usage from gains in efficiency based on a normalizing factor that is population based? This would drive all action.
 - Supplemental electricity generation from methane recovery at old landfill.
 - Supplemental electricity generation from hydroelectric plant by increasing water freeboard in the retention water pond area.
 - LED, CFL, and other high energy efficient lighting for all government needs and uses.
- Public outreach and education.
 - People generally want to do something but are not sure what to do
 - Saving resources saves real money
 - Reducing thermostat and putting insulation blanket on water heater

2009 Forward

➤ Water and Sewer

- Should we consider a mandatory 2% annual reduction in usage from gains in efficiency based on a normalizing factor that is population based? This would drive all action.
- Public outreach and education.
 - People generally want to do something but are not sure what to do
 - Saving resources saves real money
 - Collecting rainwater or air conditioning condensate to water house plants, patio plants and small gardens.

Business Examples of Environmental Leadership

- **Stanley Furniture–Martinsville Division–2000 to 2006 as reported to the U.S. EPA and the VADEQ**
 - Reduced landfill waste - 57.2%
 - Reduced VOC emissions – 36.7%
 - Reduced usage of hazardous materials – 67.2%
 - Facility production increases - 256%
 - Significant dollar savings
- **Hooker Furniture–Martinsville Operations–2008/2009**
 - 1,004, 648 pounds of waste recycled
 - Now encouraging employees to bring recyclables to work - commendable
 - Goals going forward - business decision
 - Reduce all landfill waste by 75%
 - Recycle cardboard, office paper, mixed paper, and plastic bottles-100%
 - Ban the use of Styrofoam cups
 - Reduce usage of water, electricity, natural gas, and propane - each by 15%

City of Martinsville

- What is the written environmental policy?
- What is the written environmental mission?
- What are the stated environmental goals?
 - Are they specific and measurable?
 - POLICY, MISSION, and GOALS combine to form an Environmental Management System
 - Every action by the City and City Council should always consider environmental impacts and resource sustainability.

Proactive

verses **reactive**



Daily Reminder

“Do not wait for extraordinary circumstances to do good action; try to use ordinary situations.”

— *Jean Paul Richter*