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# Town of Walnut Cove

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Strategic Energy  
Management Plan

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March 2011

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This Strategic Energy Management Plan was prepared by:

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In coordination with:

**Waste Reduction Partners**

**Town of Walnut Cove**

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## **Introduction**

The Town of Walnut Cove has begun the process of making their buildings energy efficient in order to create a cleaner environment. Town actions include:

- Utilizing a recycling program in several buildings
- Educating the staff and community about the benefits of recycling
- Conducting energy assessments on the most inefficient buildings
- Creating a walkable community

By creating and utilizing an Energy Management Plan, Walnut Cove hopes to save energy and reduce the town's greenhouse gas "footprint". The town will also benefit from cost savings due to a decrease in utility bills.

The town of Walnut Cove is dedicated to pushing forward in energy efficiency and improving the community's surroundings by encouraging energy efficiency in the community by acting as a beacon to the surrounding community.

This Energy Management Plan will be considered for approval by the board at their 04/05/2011 meeting.

## **Executive Summary**

This Energy Management Plan is a collaborative work between the Northwest Piedmont Council of Governments, Waste Reduction Partners, and the Town of Walnut Cove. With this energy plan, Walnut Cove will have the means to make conscious and informed decisions to save energy and improve efficiency in all town facilities. The town will use this plan to be good stewards to the environment while growing and improving the town in sustainable and efficient ways.

This plan will encourage energy-conscious decisions in order to reduce energy consumption without compromising safety, security, comfort, and overall work output.

The town has already taken the steps to identify key elements and focus areas to cover in the plan. These areas will be considered for improvements and updates based on need and available funding.

## **Goals**

The Town of Walnut Cove has created this energy plan with the assistance of Northwest Piedmont Council of Governments, and Waste Reduction Partners. The town's goals with this plan are to:

1. Reduce overall energy use
2. Decrease carbon footprint
3. Conserve water
4. Increase energy awareness
5. Educate staff and community
6. Reduce Energy Use by 5% by 2012
7. Reduce Energy Use by 15% by 2015

## Strategies

Walnut Cove is prepared to use several strategies and tactics to accomplish these goals. Some of these strategies include:

1. Replace lights and appliances with more efficient products
  - a. Follow Waste Reduction Partners assessment suggestions
  - b. Replace T12 bulbs with T8 bulbs
  - c. Replace inefficient motors
  - d. Replace heat pumps
  - e. Replace hot water heaters
  - f. Keep equipment well-maintained and in good operating order
2. Use sustainable methods to decrease carbon footprint
  - a. Encourage carpooling and walking
  - b. Use less energy
  - c. Utilize more efficient appliances
  - d. Encourage employee participation
  - e. Encourage community participation
3. Utilize low-flow fixtures
  - a. Aerators on sinks
  - b. Low gal/flush toilets
  - c. Educate workforce
4. Establish guidelines and goals
  - a. Increase employee involvement
  - b. Create a “green team” to monitor and encourage efficient techniques
  - c. Use incentives to increase involvement
  - d. Inform

- e. Newsletters, bulletin boards, posters, workshops
  - f. Share/Review Energy Plan with employees
5. Community Involvement
- a. Handouts/Mailings
  - b. Public availability of Strategic Energy Management Plan
  - c. Increased awareness of energy use in home

## **Key Elements of the Plan**

Data Collection – It is important to review the current energy uses in order to properly assess and encourage smart growth. This data collection includes the review of energy bills for water, electricity, and fossil fuel usage in order to benchmark and develop Key Performance Indicators (KPI). This collection also includes an energy audit of the building in order to better realize energy uses and potential problems.

Plan Development – This includes the review of policies and goals by the town leadership committee in order to encourage employee involvement and thoughts.

Communication and Employee Outreach – One of the most important parts of being energy efficient is educating the staff to be aware of their current energy usage and how to be more efficient with simple changes in behavior. These suggestions should be reminded to the staff in newsletters, emails, meetings, and handouts.

Implementation – Begin approved prioritized projects of energy efficiency and begin improvements based on energy assessments.

Evaluation – Review progress and goals. It is important to continually check progress and continue to push forward in energy efficiency.

## **Plan of Action**

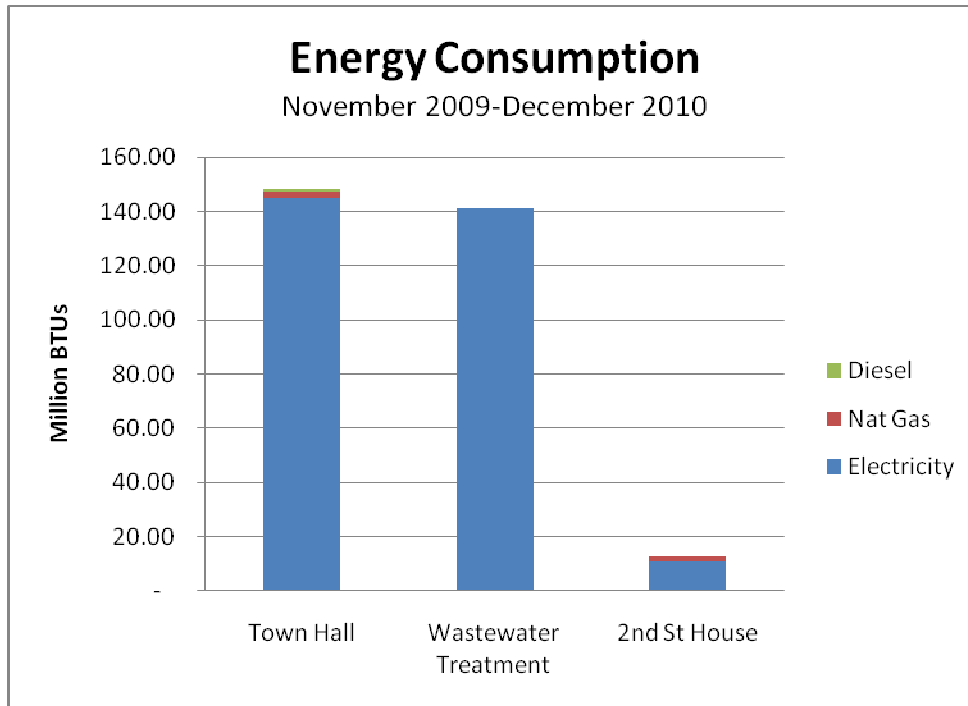
Existing Conditions – The Town of Walnut Cove owns and operates 3 buildings, varying in age and totaling approximately 13,000 sq ft.

Baseline Energy Consumption – A baseline was developed from utility bills from November 2009 thru December 2010. The three buildings listed in the table are the target buildings. These buildings were found to use the most energy per sq ft. Other buildings will be added in the future.

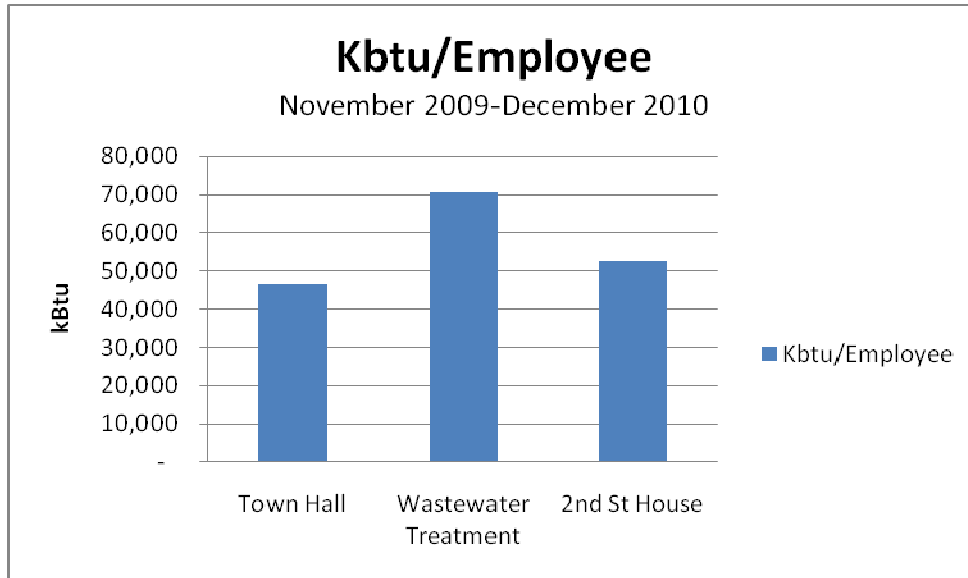
**Table 1**

Building	Million BTU's/yr.	Energy Cost \$/yr	\$/mmbtu	KBTU/gsf	\$/gsf
Town Hall	350	\$8,441.8	\$24.13	82.4	\$1.99
Wastewater Treatment Plant	200	\$5,148.93	\$25.72	-	-
House - 2 <sup>nd</sup> St	54	\$1,035.49	\$19.09	96.9	\$1.85
<b>TOTAL</b>	<b>604</b>	<b>\$14,626.22</b>	<b>\$24.21</b>	<b>84.1</b>	<b>\$1.97</b>

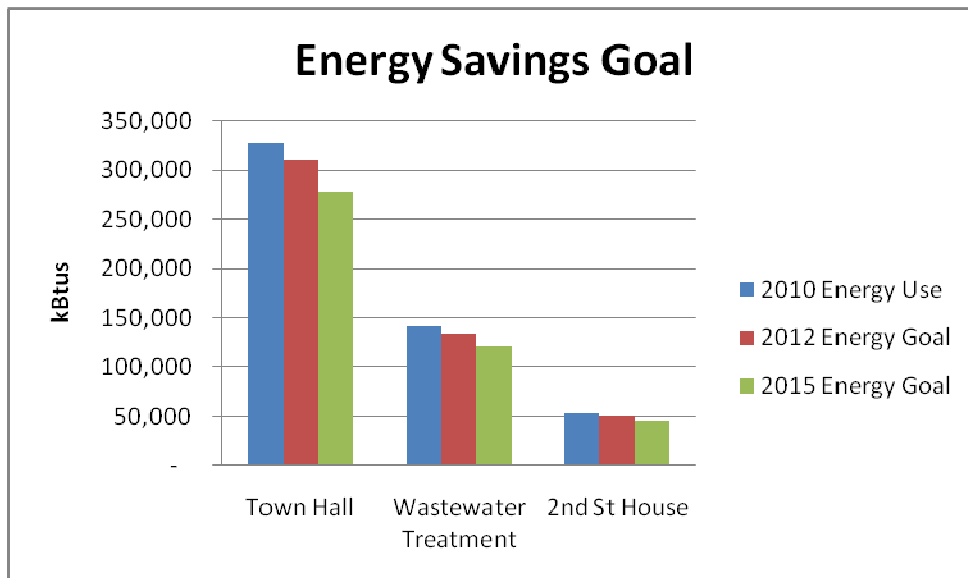
**Chart 1**



**Chart 2**



**Chart 3**





## Implementation –

The Town of Walnut Cove has realized the following key improvements for their overall cost and benefit as key areas to begin project implementation.

### 1. Education

- Designate individual(s) responsible for meeting goals and requirements of the plan. They should regularly report on progress towards goals including money and energy saved.
- Training for all involved in energy management should be provided in order to better implement this plan.
- Staff should be trained on energy-saving techniques
- Demonstrate energy saving techniques to the community and display how town is leading by example.

### 2. Lighting

- Convert T-12 lamps to T-8 lamps
- Change magnetic ballasts to electronic ballasts
- Replace all incandescent exit signs to LED exit signs

### 3. Implement Energy Saving Recommendations for the Town Hall (WRP report)

### 4. Implement Energy Savings Recommendations for Wastewater Treatment Plant (WRP report)

## **Supply**

Walnut Cove uses multiple suppliers for its energy and utility needs. The past electrical, and gas bills have been gathered and reviewed. The town is working to create baseline models for selected buildings.

The Town of Walnut Cove hopes to receive energy and fuel at the best available rate and eliminate any billing errors that may have occurred.

Focus A presents the strategies and activities for the Supply Side.

Focus A: Supply Side	
Strategy 1.	Purchase Utilities at most economical rates
Strategy 2.	Maximize utilization of incentive programs

Past Year Activities (2008-2010)	Measurement		Savings		Cost	Jobs	Accountability	Funding Source
	Expected	Actual	Expected	Actual				

2011-2013 Activities	Measurement		Savings		Cost	Jobs	Assigned to	Funding Source
	Expected	Actual	Expected	Actual				
Review utility billing rates with Duke Energy								
Check for billing errors								
Review and utilize incentive programs for energy efficiency improvements								

2013-2015 Activities	Measurement		Savings		Cost	Jobs	Assigned to	Funding Source
	Expected	Actual	Expected	Actual				

## **Demand**

Energy Management begins with data collection. This data includes billing information, equipment information, and any other specifics pertaining to the energy use of the town facilities.

Recommendations made by the maintenance department combined with the information gathered from energy assessments provided by Waste Reduction Partners can be used as key identifiers for steps that can be taken to reduce energy use and lower utility bills.

Focus B presents strategies and activities for the Demand Side

Focus B: Demand Side	
Strategy 1.	Conduct energy assessments to identify opportunities for saving energy and spending
Strategy 2.	Prioritize opportunities and recommendations based on benefits, payback, and available resources
Strategy 3.	Track energy use in major buildings and measure improvement relative to baseline
Strategy 4.	Pursue grants and other incentives as project implementation occurs

Past Year Activities (2008-2010)	Measurement		Savings		Cost	Jobs	Accountability	Funding Source
	Expected	Actual	Expected	Actual				
Curbside recycling program								

2011-2013 Activities	Measurement		Savings		Cost	Jobs	Assigned to	Funding Source
	Expected	Actual	Expected	Actual				
Energy Audits at 3 of Walnut Cove's Facilities -Town Hall, Wastewater Treatment, and house on 2 <sup>nd</sup> Street	3	3						
Implement WRP Recommendations for Town Hall			\$1175					
Implement WRP Recommendations for Wastewater Treatment Plant								

2013-2015 Activities	Measurement		Savings		Cost	Jobs	Assigned to	Funding Source
	Expected	Actual	Expected	Actual				
Fleet Assessment								

## **Communication and Training**

In order for an energy plan to be successful it is important to get the workforce and community involved. By encouraging sustainable and efficient techniques in the workplace employees can feel more involved and can also learn to use these same techniques at home to lower their energy use at home as well.

By informing and educating the community about the county's energy plan the overall area can stay involved and be fundamental party of the process offering support and decreasing their own energy use.

Focus C: Communication and Training	
Strategy 1.	Publicize Energy Management Policy to workplace and community
Strategy 2.	Educate employees on town's energy commitment and the benefits on energy management at both work and home.
Strategy 3.	Train employees to routinely perform maintenance on facility equipment to expand lifecycle and efficiency
Strategy 4.	Form Sustainability Committee
Strategy 5.	Educate community about town's energy commitment and encourage participation by educating community about benefits of energy management.

Past Year Activities (2008-2010)	Measurement		Savings		Cost	Jobs	Accountability	Funding Source
	Expected	Actual	Expected	Actual				
Curbside Recycling informative mail out								

2011-2013 Activities	Measurement		Savings		Cost	Jobs	Assigned to	Funding Source
	Expected	Actual	Expected	Actual				
Create an Energy Plan								
Create Education Opportunities for employees								
Create Education Opportunities for community								
Create a Sustainability Committee								
Campaign throughout town buildings to reduce energy use								

2013-2015 Activities	Measurement		Savings		Cost	Jobs	Assigned to	Funding Source
	Expected	Actual	Expected	Actual				
Update Energy Plan								