CHARLOTTE

Charlotte City Council

Environment Committee

Meeting Summary for February 28, 2011

COMMITTEE AGENDA TOPICS

I. **Subject:** **Environment Focus Area Plan 2012-2013**
Action: Recommend approval of Focus Area Plan Draft

II. **Subject:** **Tree Canopy Goal and Investment Strategy**
Action: None

III. **Subject:** **Next Meeting**
Monday, March 28 at 3:45 p.m. in Room 280

COMMITTEE INFORMATION

Present: Edwin Peacock, Nancy Carter, Jason Burgess, Andy Dulin and David Howard
Time: 3:45 p.m. to 4:50 p.m.

ATTACHMENTS

1. Agenda Package
2. Handout: Building Energy Performance PowerPoint
3. Handout: Tree Canopy Goal and Investment Strategy Presentation

DISCUSSION HIGHLIGHTS

Committee Discussion:

Committee Chair Edwin Peacock welcomed everyone to the meeting and asked those around the table to introduce themselves. He then turned the meeting over to Assistant City Manager Julie Burch.

I. Environment Focus Area Plan 2012-2013

Ms. Burch said the first item is to ask for approval of the Focus Area Plan. You've spent several meetings on the Focus Area Plan and there was conversation at the extension of the Council Retreat. I wanted to call your attention to the Focus Area Plan (copy attached), which is the latest draft and there are three things I want to highlight. At the bottom of Page 2 in green, we had some conversation in our last meeting regarding stream mitigation and rewording that target to be a bit more specific. Engineering and Property Management are proposing this language at the bottom of Page 2, and also pointing out that that is the first municipally-managed mitigation bank in the nation, as far as we know. In other words, keeping that money local. Then, I want to skip over to Page 4, again the wording in green. You had some conversation before about increasing the awareness of the environment as a priority for the City and to actually communicate more of our message throughout the community through a variety of audiences on what the City is doing, and has done, and what they plan to do in the future. We will need to work around some specifics to figure that out and we will work with Kim McMillan and her staff to determine the best way to get our message out. The Power2 campaign is a very big shot in the arm to make that happen.

Carter: It seems some sort of handout for us to use at NLC would be very beneficial.

Burch: Okay, we can look into that. It will be condensed of course, but some kind of handout. It will be a low cost paper; two- sided, showing major highlights and achievements. Finally, there was some conversation at the last meeting about building energy audits and in particular, the tool of performance contracting. I have asked Engineering and Property Management to come to the meeting today and make a brief presentation about the energy audits that we have done on City facilities and also the information we have related to performance contracting. This will be just for your information since it came up as a result of the Focus Area Plan.

Peacock: Where was I suggesting inserting that language? I couldn't find my notes last time.

Burch: From my notes from the last meeting, I would say it was at the bottom of Page 3, which is under the Initiative about leading by example. Also, there is that measure about demonstrating environmental sustainability in the design, construction and operation of

City facilities. We have a target in there to prepare annual report on the implementation of the Policy for Sustainable Facilities. We would suggest to you that it may not be necessary to actually have a target or measure related to building energy audits because that is a normal process for us and has been for several years.

Peacock: Which one of these would that typically fall under? Leading by example, would that be an initiative?

Burch: We can always provide information to the Council on the results of our energy audit and you are going to hear that today. We can always put that in some more formal report to the full Council if that would be of interest.

Dulin: In Initiative I, measure C, target 2, it says keep 100% of stream mitigation investment local by utilizing City's Stream Mitigation Bank, etc. Just to be completely consistent, that is something that I have voted against. That is the stream mitigation and dam remediation that we are doing in local neighborhoods, I think.

Burch: It is in relation to the pond and dam policy.

Blackwell: Mitigation banks on creeks are different than the ponds. The mitigation banks on the creek is picked up as stream bank and that gives you credit in the mitigation bank.

Peacock: On this particular item, which I like how it was written, I wanted it to be a little clearer in how we were spelling out something that we were doing and doing well. It was also unique to us in that it's 100% of the stream mitigation investment by utilizing the City's Stream Mitigation Bank, the first nationally managed one rather than a state managed one.

Ms. Burch introduced William Haas from Engineering and Property Management. Mr. Haas reminded the Committee that he was here in November 2009 when we talked about performance contracting. At that time, we talked in depth about performance contracting. We talked a little bit about the performance of City owned buildings, but today I want to talk a lot more about performance of City owned buildings and also talk about performance contracting along the way. Mr. Haas then read through the "Building Energy Performance" presentation (copy attached). He then asked the Committee for any questions.

Dulin: Regarding the Discovery Place boilers, why wasn't that caught when we just did a $32 million renovation of that building?

Hass: I really don't know the answer to that, but I suspect it came down to us and Discovery Place trying to find a way to put a lot of that investment into things you can see like the exhibits and some of the things that patrons can actually touch.

Dulin: I'm not pointing any fingers here, but we spend $32 million to renovate this building that we own and we opened it up again within the last three months and now we

are saying we need a new boiler. Somebody missed that.

Burch: We will turn to our Engineering staff to determine what happened there. We don't have that information right now, but we can certainly get you more information about that.

Peacock: I'd also like to know if they knew about it and was it a deferred decision. Was it our audit team or an external one?

Hass: External.

Howard: You are doing this under energy performance. Is that because the boiler needs to be replaced or you can get more efficiency out of replacement?

Hass: The boiler is at the end of its useful life and it needs to be replaced. We are replacing it with one that is a lot more efficient and will provide longer service life.

Peacock: Regarding slide 6, you had the biggest jump between 2005 and 2006 and if I recall, it was 2006 that we did the greenhouse gas emissions.

Burch: We made the inventory on the 2006 information, yes. The inventory wasn't done until 2008.

Peacock: Why do we have such huge difference? We've doubled our reduction from 2006 to 2007.

Rutledge: I don't know for sure, but I think that was the year that we did a lot of improvements to the Government Center. The Government Center is one of the biggest users that we have so anything that we do here has a big impact.

Blackwell: One thing about energy, if it is a cold winter or a hot summer that makes energy go up and down. Building efficiency certainly enters into it.

Peacock: This is all of the City facilities?

Hass: All 150 facilities the City maintains.

Peacock: Why do you think the state is twice as inefficient as us?
Hass: They are not replacing equipment and their equipment is aging. They simply are not putting in boilers and updating.

Howard: How do we compare to the County buildings?

Hass: The County's number is $1.76 based on 2009, which is the latest data they have.

Blackwell: I would say those LEED buildings are way newer than ours. We've got the

old buildings and we are still more efficient.

Dulin: Does the County claim the Government Center in their data?

Heidi: No, we don't claim our lease space.

Carter: It seems as this is absolutely outstanding and if you benchmark cost and investment it would be an interesting study to see how long it takes to write down the investment or bring it back.

Dulin: I agree with Ms. Carter. This is actually good stuff and you guys are doing all the work, but we are the ones out selling it in neighborhood meetings on Tuesday night and Thursday night. This is the kind of data that we can use.

Blackwell: We considered performance contracting before and we feel we are doing things pretty well.

Peacock: Yes, I think the only thing we didn't have at that time was specific names. We did not have specific names of Lime, EGM, and Carrier. I don't remember you all actually disclosing that we worked with, you might have but I don't remember. I felt uncomfortable about it in the Committee last time and to a certain degree you have shared the broad representation of the other cities and I think it largely answers the questions. The only part that we are really missing here is if we are using Lime, EGM, Carrier and these other groups that are in that slide, would they also not be interested in trying to tell you and/or us that there could be an opportunity there. The only reason I bring up that point is you mentioned you are only dealing with City facilities, but on Wednesday's Budget meeting last week, Councilmember Cannon, who was there as a guest, asked about what facilities they were considering CRVA inventory in and Ron Kimble pointed out the Old Coliseum is currently being considered. He has asked for a copy of that. That is not run by you all, and as I understand it they have just dipped their toe in the water on that. When we look at the language in this we are just simply saying it couldn't hurt to have a second opinion and the second opinion is simply verifying what you all had mentioned and you have done an excellent job by doing just that; showing us exactly where these numbers come from. I think from a benchmarking standpoint, to know if it is a storm restoration or from a stream restoration, we know how unique we are as it relates to buildings and we are talking about that in the Focus Area Plan. We've added a lot of detail, we've had a lot of critique from the six outside partners, and some that wanted even more measures in here. I think staff has done a good job of balancing a lot of that.

Carter: It might be interesting to get some comparable figures from other cities in the same environment to see if there is something that we are really proactive about.

Haas: We can look at that.

Burch: The action that we would like to take on the Focus Area Plan is for the

Committee to recommend approval of the plan as presented in the draft attached.

A motion was made by Council member Carter and seconded by Council member Howard and carried unanimously to approve the draft of the Plan.

II. Tree Canopy Goal and Investment Strategy

Ms. Burch said this is a brief information item on the development of the Tree Investment Strategy and the Tree Canopy Goal and we want to take another minute to talk about the compliance of the Tree Ordinance, as it relates to the City's new police station site on Wendover.

Tom Johnson said you will recall that at the last Environment Committee meeting we came to you to talk about the tree canopy goal we are trying to set for the City of Charlotte, as well as that investment to guide that goal. There is a one-page handout (copy attached) that outlines some of the things we are thinking about. You will recall that in 2008 we got the Urban Forestry analysis with American Forest and they told us that our tree canopy was about 46% for the City. We did some in-house studies of that tree canopy and learned that our Centers, Corridors and Wedges are at 35%, 42% and 54% respectively. We also learned that our uptown area is about 16% tree canopy in 2008. These figures are average or slightly above average for the cities we've seen these studies done. We feel pretty good about that, but we also want to think about what American Forest said about it. In that report, they did make some recommendations for what our tree canopy should be and they were saying they thought that, as a whole, our tree canopy should be about 50% of our geographic area. They also made some general recommendations for cities east of the Mississippi. They think the overall tree canopy goal for most cities should be about 40%. They also say that you should arrive at this number through averaging of your different zones and they point to the Suburban Residential Zones and say they should be about 50%, but 25% in the Urban Residential Zones and the Central Business District, which could be like uptown. We are hitting those numbers fairly well at this point. The other thing we wanted to do was say that is what American Forest does, but how do we compare in contrast to other cities. So far we have not found any cities in North Carolina that have said, "This is what we want our tree canopy to be, this is our goal for the future." There are some cities around North Carolina and other states that have done assessments, but they have not set goals per se. However, some of the goals we did find were for cities in the Chesapeake Bay area. You know they have a pretty intense water quality program and a lot of good clients come out of that area, so they have done a lot of assessments in those cities and set goals for a lot of those towns.

Peacock: What is the difference in the UTC and American Forest? Is one more expensive than the other? Is one ranked better than the other?

Johnson: We haven't done a UTC, so I don't know the price. I think that the American Forest study report was more comprehensive than some of the UTC's that I've read. But they are both based on high resolution photography and are both excellent assessment

tools. I put some of these cities down for you to take a look at and their goals. I will say that from what I've heard, their goals vary greatly either by the political climate of the town where they were set or perhaps what they felt was attainable. So, there are a lot of things that influence their goals.

Peacock: You all have done two meetings about the Tree Canopy, right?

Johnson: Yes.

Peacock: So, you all have shared this data? Are we hearing from the public that our goals should be higher or what are you hearing?

Gina Shell: We heard that people feel that we need to maintain where we are at least. We didn't hear an overwhelming desire for a stretch target, anything that would be far above where we currently are. I think we got a strong message to try to maintain where we are.

Peacock: I noticed that you all didn't put anything in here from other cities about tree planting.

Johnson: As far as tree planting goes, we have heard of some towns that have tree planting initiatives.

Peacock: Does American Forest say you should be planting?

Johnson: I don't think they have offered a planting goal.

Peacock: I would put that out there to you all. Again, when we started this whole discussion on the Tree Ordinance I thought we had lost our sight on the part that citizens really do notice, and that is the tree planting component of it. What could possibly happen in the City if you ask citizens on one particular day to plant a tree? We are going to have to be a little bit more on the offensive to a certain degree. If you could get some data from them on what their recommendations are, if any, that would be helpful.

Shell: Part of what we want to bring to you next month will be an investment strategy so we will bring forward some ideas about planting, where and how.

Peacock: The other point I wanted to make is measuring tree canopy loss and increase in particular Council districts. When we were doing the Tree Ordinance, we talked about the removal of trees and how those would be dispersed within the actual area. I would love to know if they could give us more precise measures of District 1 through 7 and who has the highest and lowest percentage going forward. It might be helpful for the District Reps, in particular to give staff the ability to help Mr. McSween and his staff on tree planting.

Dulin: On the planting side of it, I asked the if we can spend $700,000 a year on trees and the answer was yes, we can spend it and we can get the trees in the ground. We've

recently gone through a little bit of trouble with our nurseries and I think Mr. Blackwell and staff is still working through that.

Peacock: Can you give us an update on that? We did get an e-mail saying that things had been put on halt and you were talking to some of the nurseries. What were some of the issues there?

Blackwell: I think there is only one nursery left that we have some issues with. I think all the other nurseries are okay. We are going to visit that nursery and have some discussions with them about what they are doing and how we might be able to solve that.

Peacock: We've got two minutes left in this meeting and Council member Dulin, you have an item on the back of this page. Tell us about your site visit to the CMPD North Wendover location.

Dulin: I took a picture of it, I went and walked the site the other day and you've heard me say you all clean-cut that site. Mr. Johnson said no, it's in compliance and I just got to thinking about it the other day and said I'm going over there. It can't be. There is no way.

Peacock: 15% tree save, right Tom?

Johnson: Actually, that site was approved prior to the Tree Ordinance revisions that we worked on. What would take place there typically would be that that site is done in Neighborhood Services and there is a 14-foot setback. The setback areas are the areas where we historically put the trees. The shift now with our new ordinance is the 15% because of the setback. However, when you were on the site you saw along Wendover Road the orange barricade around some of those trees. There are about 10 trees that were protected above and beyond what would have been required, typically. Did you see the tree protection?

Dulin: I did. You show six of them here and the other ones are scrubby, but I've been told multiple times that that strip of trees constituted the appropriate tree save for the moving forward and that it adheres to the coming 15% tree save.

Johnson: Actually, typically in the 14-foot setback there wouldn't be even those trees left. There is no tree protection and has not been any tree protection historically associated with the Tree Ordinance

Dulin: Then somebody tells me it is not the right zoning and we can cut all the trees down we want. It is maddening the excuses we come up with why we are not doing what we think we need to make everybody else do.

Burch: I would point out that it's whatever the existing ordinance is at the time. We don't do that as excuses, but in terms of the Council policy and ordinance or zoning ordinance or whatever it might be that governs that site.

Blackwell: That is exactly what we were thinking by saying we are in compliance. We are not saying we saved 15% or we did this or that, what we did there is what we would have expected anybody to do in that zoning.

Peacock: Council member Dulin, what you are saying is you feel as it says in our Focus Area, that we need to lead by example and if we can save 15%, we should.

Dulin: Well, I didn't think of that, but that is a really good point.

Peacock: I think that is the point you want to make. You want to hold us our standards. As we close, what is scheduled for the next agenda?

Burch: Tree Investment Strategy and Tree Canopy Goal. I think that will be the full meeting. From there, I don't have anything on deck after that right now. At some point, we will be carrying forward the Focus Area Plan and the implementation of that. For example, the Alternative Energy Strategy is part of the Focus Area Plan and it will be coming back to you. I suspect that will not be in May, but further down in 2011.

Peacock: I'm not on Restructuring Government, but wanted to find out how that item is going related to the Environmental Committee Advisory Board.

Burch: It has not been scheduled yet.

Peacock: We may want to ask the Chair, Council member Cooksey or Manager Walton if he has too much on his plate, if we don't have enough on ours, I think that would be appropriate for our Committee to look at.

Burch: It will be entirely up to the Council to decide which Committee.

III. <u>Next Meeting</u>

Monday, March 28, 2011 at 3:45 p.m. in Room 280.

Meeting Adjourned

Environment Committee

Monday, February 28, 2011 at 3:45 p.m.
Charlotte-Mecklenburg Government Center
Room 280

Committee Members:	Edwin Peacock, Chair Nancy Carter, Vice Chair Jason Burgess Andy Dulin David Howard
Staff Resources:	Julie Burch

AGENDA

I. <u>Environment Focus Area Plan 2012-2013</u>
Staff Resource: Julie Burch and members of the Environment Cabinet

The Committee is asked to recommend that the City Council adopt the Environment Focus Area Plan for 2012-2013. Engineering and Property Management staff will make a brief presentation about performance contracting, a tool utilized by some agencies to finance energy improvements, and the City's experience and results with building energy audits.

II. <u>Tree Canopy Goal and Investment Strategy</u>
Staff Resources: Gina Shell and Tom Johnson, Engineering and Property Management

Staff will provide a brief status update on development of the strategy. No action is requested. In response to questions raised at the last meeting, staff will also briefly discuss the City's compliance with the Tree Ordinance at the Wendover site for the new Charlotte-Mecklenburg Police facility.

III. <u>Next Meeting</u>

Monday, March 28 at 3:45 p.m. in Room 280

Distribution:	Mayor/City Council Mac McCarley	Curt Walton, City Manager Stephanie Kelly	Leadership Team Environmental Cabinet

FY2012 Strategic Focus Area Plan - **Draft**

"Charlotte will become a national leader in environmental and energy sustainability, preserving our natural resources while balancing growth with sound fiscal policy."

The City of Charlotte recognizes that environmental stewardship is fundamentally important to quality of life and essential to maintaining a vibrant economy. Protecting our natural resources, promoting conservation, and improving the environment all enhance the City's mission to preserve the quality of life of its citizens.

Charlotte will become a national leader in environmental sustainability by:

- Promoting and participating in the development of an environmentally sustainable community;
- Leading by example by practicing environmental stewardship in City operations and facilities;
- Seeking and supporting collaborative and regional solutions to environmental problems;
- Facilitating the growth of the clean energy industry, including the alternative energy sector.

As illustrated in the graphic below, the Environmental Focus Area is interrelated to <u>all</u> of City Council's other focus areas.

Specific initiatives in Economic Development and Transportation Focus Area Plan relate directly to Charlotte's environmental goals. These FAPs include initiatives for growing jobs in the energy sector, land-use planning, and increased use of transit and other transportation choices.

Environment

I. ENV Focus Area Initiative: PROMOTE AND PARTICIPATE IN THE DEVELOPMENT OF A SUSTAINABLE COMMUNITY

A. FY12 Measure: Increase awareness of the environment as a priority for the community

1. FY12 Target: Explore hosting a sustainability expo/conference and other educational opportunities in conjunction with and funded by other partners.

2. FY12 Target: Increase the exposure of the Power2Charlotte, CurbIt recycling campaign, and other educational/outreach efforts in coordination with other partners.

3. FY12 Target: Implement the nine (9) Energy Efficiency and Conservation Block Grant projects that are catalyst projects or promote energy investments in revitalization areas, and the Neighborhood Energy Challenge.

4. FY12 Target: Collect baseline data on environmental variables in preparation for adding those variables to the biennial Quality of Life study.

5. FY12 Target: Increase access to local foods by: initiating a fresh foods text amendment; encouraging the development of community gardens through Neighborhood Matching Grants program, and collaboration with other partners.

B. FY12 Measure: Make wise decisions regarding growth and development that are consistent with adopted plans and policies (including the GDP-Environment) and minimize negative environmental impacts of land use and development.

1. FY12 Target: Ninety-five percent (95%) of rezoning decisions consistent with adopted area plans and/or staff recommendations.

2. FY12 Target: Eighty percent (80%) of approved rezonings incorporate environmentally sensitive site design components (Implementation of GDP-Environment)

C. FY12 Measure: Responsibly manage Charlotte's natural resources including the tree canopy, streams, ponds, and wetlands.

1. FY12 Target: Implement the City's Tree Canopy Investment Strategy and measure the effectiveness of the Tree Ordinance and the Tree Planting Programs in meeting the tree canopy goal.

2. FY12 Target: Keep 100% of stream mitigation investment local by utilizing City's Stream Mitigation Bank, the first municipally-managed mitigation bank in the nation, rather than the state-managed bank, whenever public project remediation is required.

D. FY12 Measure: In support of State of North Carolina and City recycling goals, increase single family and multi-family recycling participation.

1. FY12 Target: Achieve a 30% increase in tonnage of recycled materials over FY10 baseline data.

II. ENV Focus Area Initiative: LEAD BY EXAMPLE BY PRACTICING ENVIRONMENTAL STEWARDSHIP IN CITY OPERATIONS AND FACILITIES

A. FY12 Measure: Reduce greenhouse gas emissions from City facilities and operations.

1. FY12 Target: Adopt a greenhouse gas action plan by June 2011 and begin implementation in FY2012

2. FY12 Target: Complete seven (7) of the Energy Efficiency and Conservation Block Grant projects designed to improve efficiency of City facilities.

B. FY12 Measure: Demonstrate environmental sustainability in the management of the City's vehicle fleet.

FY12 Target: Achieve 4.3 mpg across CATS Bus Operations fleet vehicles, by continuing acquisition of and maximizing the use of fuel efficient and hybrid vehicles, maintaining and monitoring idling practices, continuing to control vehicle speed through governor settings, use of battery power for vehicle maintenance when feasible, and continued use of ultra low sulfur diesel fuel

FY12 Target: Improve the efficiency of the overall City fleet from 2011 levels by purchasing alternative fuel vehicles as funding allows in accordance with the fleet management policy, purchasing smaller vehicles that meet operational requirements, and by seeking grant funding to outfit current vehicles with emissions reducing technology.

C. FY12 Measure: Demonstrate environmental sustainability in the design, construction, and operation of City facilities.

1. FY12 Target: Prepare annual report on the implementation of the Policy for Sustainable Facilities, reporting project decisions, common facility metrics, and recommended policy adjustments.

2. FY12 Target: Per Clean Water Act requirements, develop and begin implementing plans for stormwater best practices for priority field operations by June 2012.

3. FY12 Target: One-hundred percent (100%) compliance with National Pollutant Discharge Elimination System permit requirement for all five wastewater plants.

4. FY12 Target: Divert 70% of materials from Charlotte Douglas Airport's waste stream via a new airport recycling center.

D. FY12 Measure: Implement environmentally-conscious practices in the acquisition and disposition of City resources.

1. FY12 Target: Conduct first year review of the effectiveness of Environmentally Preferable Purchasing Policy by December 2012 and collect baseline info so that specific improvement target may be set in the future.

E. FY12 Measure: Identify and advance renewable energy projects leveraging City resources.

1. FY12 Target: Implement the initial construction of a Combined Heat and Power project at McAlpine Wastewater Management Facility by June 2012.

2. FY12 Target: Develop and implement a solar energy pilot project on CATS-owned bus canopies by June 2012.

F. FY12 Measure: Increase awareness of the environment as a priority for the City

1. FY12 Target: Communicate the City's environmental successes and the other ways the City is "leading by example."

III. ENV Focus Area Initiative: SEEK AND SUPPORT COLLABORATIVE AND REGIONAL SOLUTIONS TO ENVIRONMENTAL PROBLEMS

A. FY12 Measure: Collaborate and participate in public and private sector partnership's environment and visioning initiatives.

1. FY12 Target: Collaborate with City's Energy Partners and other agencies to leverage resources and enhance the impact of cooperative projects.

2. FY12 Target: Identify opportunities to participate in/pursue the development of a coordinated sustainability plan for the community with Charlotte Center City Partners and other partners

B. FY12 Measure: Lead and support efforts to improve Charlotte and regional air quality by promoting long-term reduction in ozone causing emissions.

1. FY12 Target: Implement projects and partnerships with business/management organizations to increase travel by alternative modes to/from/within two mixed-use activity centers by June 2012.

2. FY12 Target: Continue collaboration and participation with COG's CONNECT Regional Air Quality Work Team, the Regional Air Quality Board and Clean Air Works, the Mecklenburg County Division of Air

Quality and the State of NC Division of Air Quality to implement strategies to improve air quality.

C. FY12 Measure: Continue a leadership role in regional water resources planning

1. FY12 Target: Utilities staff to continue participation in regional Water Management Group and be actively involved with committee work.

IV. ENV Focus Area Initiative: FACILITATE THE GROWTH OF THE CLEAN ENERGY INDUSTRY, INCLUDING THE ALTERNATIVE ENERGY SECTOR

A. FY12 Measure: Work with partners through the Charlotte Regional Partnership's Energy Capital Project to attract and grow the clean energy industry sectors in Charlotte

1. FY12 Target: Develop a clean energy strategy by January, 2012 with a particular focus on assisting small businesses.

B. FY12 Measure: Improve the regulatory environment by clarifying and enhancing City ordinances that facilitate environmentally and energy sustainable practices.

1. FY12 Target: Initiate alternative energy text amendments to better define and provide guidance for environmental land uses by June 2012.

C. FY12 Measure: Take a leadership role in changes to policy at the state and federal level

1. FY12 Target: Support energy related legislation that would enhance and solidify Charlotte's emergence as an energy center in the United States.

CHARLOTTE
ENGINEERING & PROPERTY MANAGEMENT

Building Energy Performance

Prepared by
Engineering & Property Management
February 28, 2011

CHARMECK.ORG

CITY OF CHARLOTTE

Building Energy Performance

City of Charlotte building performance

What is Performance Contracting?

Questions owners should ask

Experience of other local governments

Questions

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Building Energy Performance

City of Charlotte
Engineering & Property Management
Building Performance Summary

CHARMECK.ORG

CITY OF CHARLOTTE

City Building Energy Performance

E&PM has a full-time Energy Manager

33 City facilities have received energy audits

City plans to conduct an energy audit for the more energy-intensive buildings every 10 years.

Currently auditing Discovery Place.

Law Enforcement Center and new Cultural campus will be next.

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

City Building Energy Performance

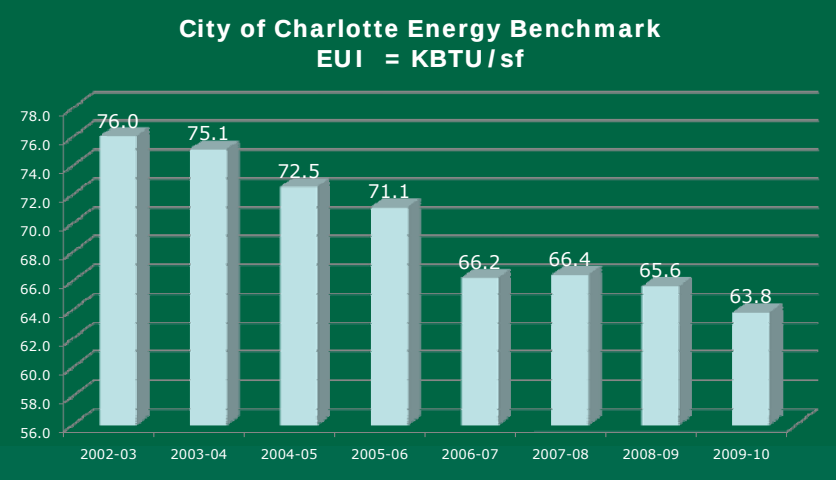
The City has used these audit firms in the past:

- NC State University – they hire consultants (cost to City is subsidized through a grant)
- Duke Energy – they hire consultants (Duke Energy pays for about half the cost)
- Piedmont Natural Gas
- Lime – they also operate as an Energy Service Company
- EGM – they also operate as an Energy Service Company
- Carrier – they also operate as an Energy Service Company
- TKG Engineering Group
- Gunnell Engineering

CHARMECK.ORG

CITY OF CHARLOTTE

City Building Energy Performance

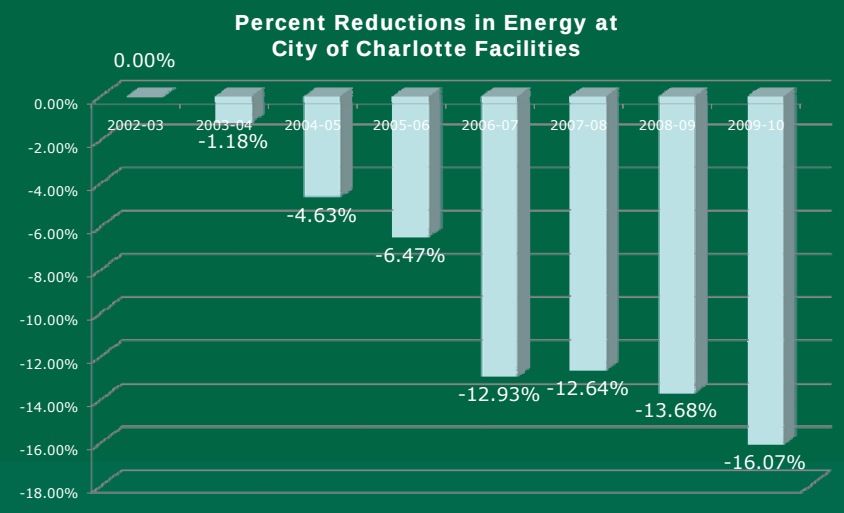


CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

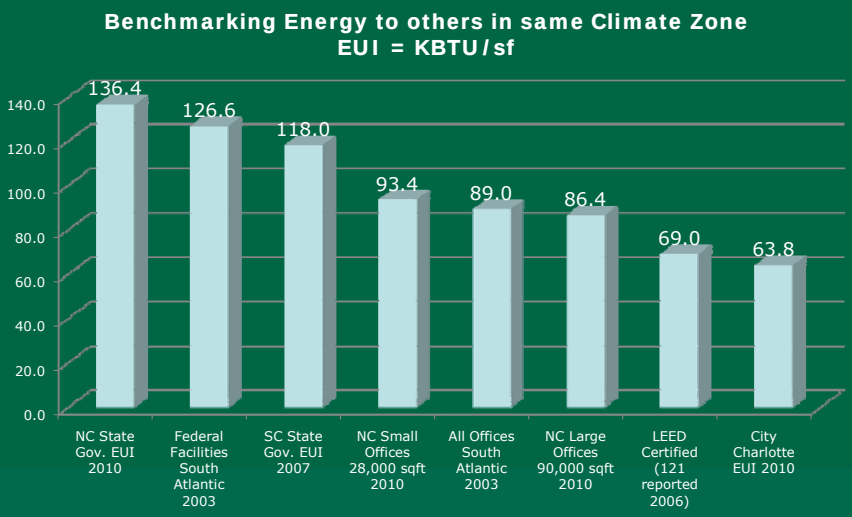
City Building Energy Performance



CHARMECK.ORG

CITY OF CHARLOTTE

City Building Energy Performance



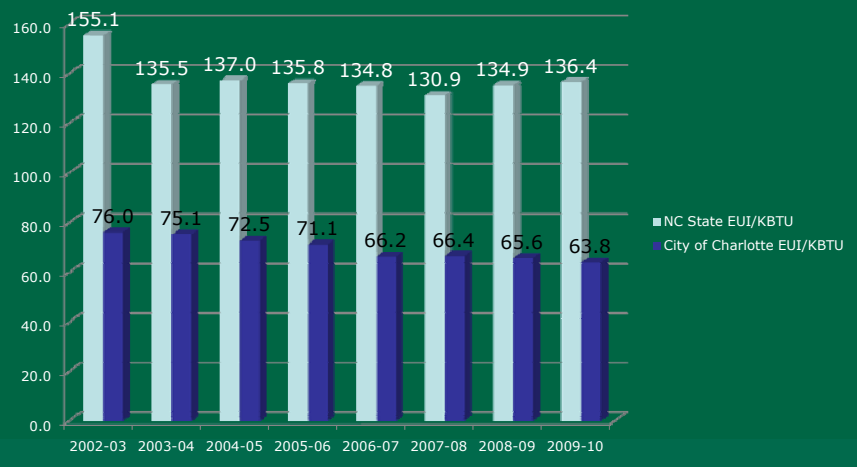
CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

City Building Energy Performance

City Facilities Energy Use Compared to State of NC-Owned Facilities

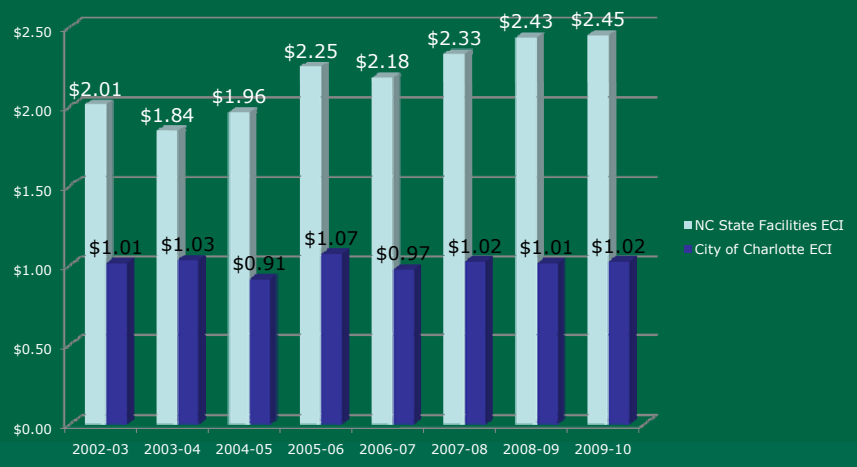


CHARMECK.ORG

CITY OF CHARLOTTE

City Building Energy Performance

City Facilities Energy Cost ECI Compared to State of NC-Owned Facilities



CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

City Building Energy Performance

Council is approving funding for an appropriate level of maintenance

Energy Manager and technical staff are finding ways to continually improve performance

City of Charlotte buildings out-perform comparable groups in our region

CHARMECK.ORG

CITY OF CHARLOTTE

Building Energy Performance

What Is Performance Contracting?

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Building Energy Performance

Terms and Acronyms

PC - Performance Contracting

ESCO - Energy Service Company

IGA - Investment Grade Audit

M & V - Monitoring & Verification

LGC – Local Government Commission

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Formal Definition

"A single procurement contract for engineering, construction, installation, start-up, measurement, verification, operation and maintenance that specifies performance energy saving improvements in buildings/facilities that will result in sufficient avoidance energy cost and enhanced recovery from utility systems to pay for the cost of equipment, materials, labor, subcontracts, fees, insurance, bonds, permits, debt service, and all cost associated with the implementation of the contract."

Source: North Carolina Guide to Energy Performance Contracting

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting

Traditional Service

- PC is a tool available to local governments
- An ESCO designs and implements energy saving changes and guarantees the savings of the cost reductions.
- The Owner pays for the package over time using the stream of revenue from the annual energy savings.
- Calls for separate, third party monitoring & verification.

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Additional Services Provided by ESCO Firms

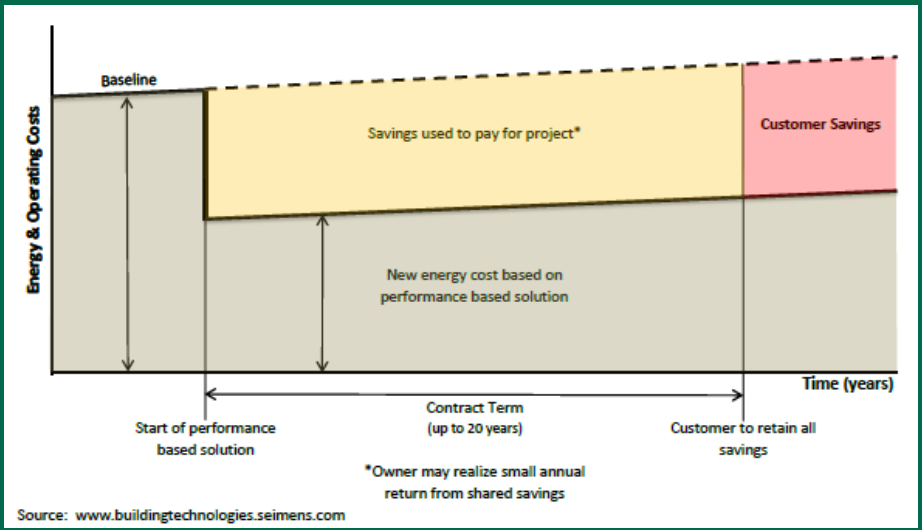
- Energy audits
- Design services
- Project management
- Analyzing energy rates
- Operation
- Maintenance

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting



Source: www.buildingtechnologies.seimens.com

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Questions an Owner Must Ask
When Considering a Performance Contract

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting

Facility Management Questions

- Have we deferred maintenance?
- Are there recurring maintenance problems?
- Can we self-fund the replacement of aging equipment?
- Do we have to reallocate funding to other areas?
- Do we need energy management expertise?
- Do we need to re-direct staff to other facility issues?

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

PC Contract Questions

- What portion of savings will accrue to us until the end of the contract term?
- Can ESCO adjust the "guaranteed" savings due to changes?
- What are the additional costs we will incur?
  - 3rd party measurement and verification
  - Project management
- Will equipment be out-dated at the end of the term?
- What is the mark-up percentage?

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting

City Finance Questions

- Should we use PAYGO (cash) or issue COPs for energy projects?
- If we issue COPs, will the interest rate be 2.75% like the last COPs issuance?
- What type of surety will the ESCO provide?

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Role of the Local Government Commission

- Because it is considered debt, LGC must approve PC contracts
- LGC keeps all PC contracts
- Requires an annual report

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting

Local Government Commission Concerns

- Concerned that ESCO has sufficient credit
- Interest rate must be fair

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Local Government Commission Findings

- NC local governments rarely use PCs
- Local governments can finance themselves at lower cost
- NC school systems and colleges have used PCs more
- ESCOs add energy inflation rates 2%-3% over what the LGC prefers.

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting

Local Government Commission Findings

- ESCO interest rates are typically higher than the City's bond or COPs rate.
- PC energy inflation rates are typically set 2%-3% higher than the LGC prefers.
- PC mark-ups are typically 15%-20% over what local governments would pay.
  - Must pay taxes
  - Should make a profit
  - Must pay overhead
  - Higher financing costs

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Experience of other local governments

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Other Local Governments Contacted

Mecklenburg County
CMS
City of Knoxville
City of Greenville, SC
The Citadel
Medical University of South Carolina
City & County of Durham

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Mecklenburg County – PC is the only way they can afford to improve building performance

City of Knoxville – chose not to spend entire CIP on energy upgrades; ESCO firm had a lower interest rate

City of Greenville – fell too far behind in maintenance; 70% reimbursement through Federal funds

The Citadel – PC allowed them to re-direct staff to other building needs

MUSC – ran out of money before they ran out of energy saving ideas

CHARMECK.ORG

CITY OF CHARLOTTE

Building Energy Performance

City has kept up with maintenance

Energy Manager and technical staff continue to improve building performance

PC is a good tool mostly used by local government that have not kept up with maintenance

Staff prefers to self-fund energy projects and accrue all of the savings directly to the City.

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Questions?

CHARMECK.ORG

CHARLOTTE

CITY OF CHARLOTTE

Performance Contracting

Benchmarks that trigger ESCO interest in a facility compared to City-owned averages

Benchmark	PC Firms Prefer	City Averages*
Building Area	> 70,000 sf	25,700 avg 13 are > 70,000 sf
Annual Electricity Consumption	50 kwh/sf	13.7 kwh/sf
Annual Gas Consumption	75 kbtu/sf	16.9 kbtu/sf
Age of buildings with no energy upgrades	> 10 years	0
Building automation	No	70% of Facilities Automated
Annual Energy Cost	> $1.50 per sf	**1.02 Cents

*E&PM maintained buildings only

** In 2009, Mecklenburg County's cost was $1.76 per sf

CHARMECK.ORG

CITY OF CHARLOTTE

Performance Contracting

Energy Performance for City-Maintained Facilities

Greater than 70,000 Square Feet

	2011					2009
Facility	Building Size (sf)	kwh/sf	kbtu/sf	$/sf/yr	EUI	EUI
CATS - South Tryon facility	406,949	12.5	20.3	$0.90	62.8	61.0
Law Enforcement Center - Trade Street	447,353	12.5	1.8	$0.70	44.6	43.8
Government Center	409,383	17.4	15.3	$1.27	74.5	75.8
Discovery Place	153,893	20.2	9.9	$1.31	79.1	94.9
Discovery Place Education Center	186,760	2.6	1.5	$0.17	10.4	10.9
Mint Museum - Randolph Road	76,000	26.9	67.9	$2.38	160.0	157.7
Police & Fire Training Academy	108,000	18.9	30.3	$1.46	94.7	86.3
Performing Arts Center	165,000	21.3	0.0	$1.26	72.8	62.7
Averages	1,953,338	15.3	12.3	$1.00	64.0	57.6
Performance Contracting "Triggers" according to SEO Guidelines	> 70,000 sf	50.0	75	$1.50		
City Averages for 150 facilities	25700 sf	13.7	16.9	$1.02	63.8	65.6

CHARMECK.ORG

CHARLOTTE

Environment Committee Meeting
February 28th, 2011

Tree Canopy Goal And Investment Strategy

- Charlotte's 2008 overall tree canopy is 46%.

  Sub-area canopy:
  - Centers 35%
  - Corridors 42%
  - Wedges 54%
  - Uptown 16%

- This is average or above average for metropolitan and suburban areas in the U.S.

American Forest recommendations regarding goals:

- On their website, American Forests provide general guidelines for cities east of the Mississippi:

  Overall Tree Canopy Goal 40%

  Sub-goals:
  - Suburban Residential Zones Goal 50%
  - Urban Residential Zones Goal 25%
  - Central Business Districts Goal 15%

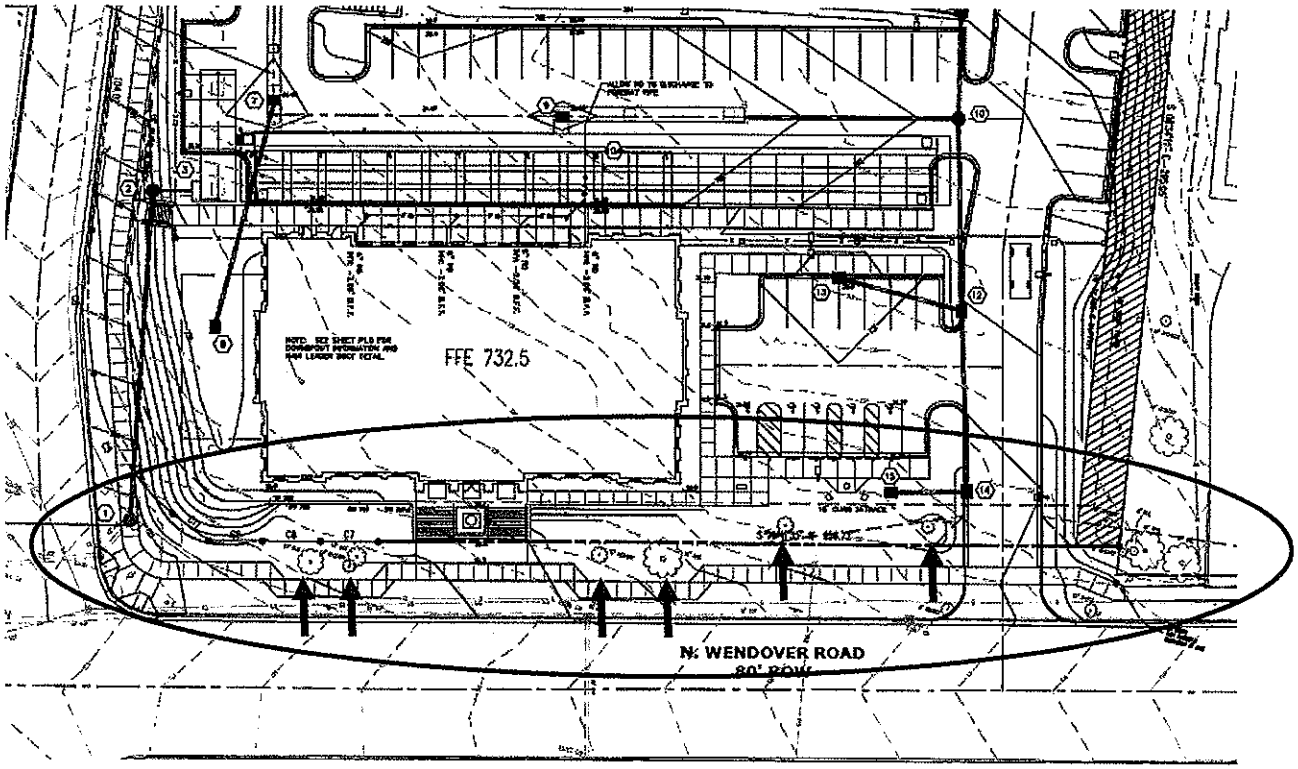
- In their report for Charlotte-Mecklenburg, American Forests recommended a goal of 50% for Mecklenburg County.

Other cities that have set goals:

- We have yet to identify another NC city which has set a tree canopy goal, though several have studied their canopy and developed management plans.
- Cities in the Chesapeake Bay Area set goals due to environmental initiatives to promote water quality.

City	Current	Goal
Annapolis	41%	50%
Baltimore City	27%	46%
Brunswick	38%	48%
City of Frederick	12%	40%
Chestertown	N/A	40%
Prince George's	N/A	44%

http://vc.charmeck.org/
http://maps.co.mecklenburg.nc.us/geoportal/

Update on CMPD Providence Division 718 N. Wendover Road

1) CMPD Providence Division Station plan (full plan set available digitally at meeting).