MITRE Building Energy Technology Report and Fairfax County Staff Perspectives
Consolidation of comments received as of February 11, 2015
Prepared by Fairfax County staff, February 12, 2015

Background

The Planning Commission's Environment Committee has been reviewing a report from the MITRE Corporation entitled "Building Energy Technology Recommendations to Fairfax County." The report was prepared per a proffered commitment from MITRE to the performance of sustainability-related work for the benefit of the county. This is the second of two reports that MITRE has provided to the county; the first was a report addressing electric vehicle charging infrastructure, which the Planning Commission Environment Committee is continuing to review. Like that first report, the building energy technology report was referred by the Board of Supervisors to the Planning Commission for its review and recommendation. The committee has met on several occasions to discuss this report and to engage county staff in discussions regarding staff's perspectives on the report's recommendations.

At the request of the Environment Committee, county staff prepared a document that provides its perspectives on the recommendations presented in MITRE's building energy technology report.

In November 2014, the Environment Committee invited any interested party to provide comments on the MITRE report and/or staff perspectives document. Comments were requested by January 30, 2015. Comments have been received from the following:

- Linda Burchfiel
- Eric Goplerud (forwarding thoughts from Ivy Main)
- Ross Shearer

All of these comments have been provided directly to the Environment Committee for its consideration. This document is staff's attempt to consolidate these comments within the context of the structure of the MITRE report and staff perspectives document. While staff has copied the comments verbatim in most cases, staff has at times paraphrased the comments for purposes of clarity.

The comments are presented within the context of the 12 recommendations from MITRE that were identified in the staff perspectives document. While each of the 12 MITRE recommendations is referenced, the recommendations are not repeated from the staff perspectives document. The reader is encouraged to reference the staff perspectives document for the specific language within the MITRE report relating to each recommendation. Comments that provide general guidance or that do not clearly address one particular recommendation from the MITRE report are presented first as "general comments."

Staff is anticipating that the Environmental Quality Advisory Council will transmit comments prior to the Environment Committee's February 18, 2015 meeting.

General Comments

- "One primary theme of the MITRE report is about leadership. In its recommendation 4c (See page 20 or page 10 of the staff perspectives) MITRE sees Tysons development as an opportunity for Fairfax to distinguish itself by participating in driving the national transition to sustainable living. Specifically MITRE recommends Energy Star as the tool for obtaining high energy efficiency in buildings and MITRE recommends findings ways for publicly reporting building energy use to prospective tenants and condo owners thus empowering the use of markets to help drive efficiency. MITRE explains that improving energy efficiency of buildings will 'pave the way towards net zero development' and Fairfax should participate. By helping 'to improve the state of the art' at Tysons, a more aggressive energy efficiency agenda would yield a civic 'effect greater than just the development itself'. This is the stuff of leadership. Fairfax should seize it." (Ross Shearer)

- ". . . County energy policy should be formed around a strategy that contributes to the transformation of our energy economy to a sustainable one based on renewable sources and efficiency and that deliberately pushes towards the absolute abandonment by 2050 of our current reliance on fossil fuel forms of energy production used for buildings. The leadership MITRE advocates for Tysons would contribute to this transformation." (Ross Shearer) (see also Recommendation 2c, but this could apply to other renewable sources of energy as well)

- "I asked Ivy Main, the Virginia director of the Sierra Club, to review the Mitre report and staff responses, especially as they related to solar recommendations. She responded that the Mitre report seemed like it was put together by people without specialized energy knowledge and with a private sector bias against government setting any rules. She felt that the Fairfax County staff report was generally better, except as to solar, where it was at least very dated." (Eric Goplerud)

- "In order to be seen as a leader in energy efficient technology, it is important for FCG [Fairfax County Government' to be on record as encouraging energy efficiency performance in every way it legally can." (Linda Burchfiel)

MITRE Recommendation 1: Building Technologies

- No comments limited to building technologies vs. certifications, but several comments regarding the need to augment LEED with energy-specific performance. See recommendation 4c

MITRE Recommendation 2a: Individual Technologies/Data Collection--Wind

- No specific comments.

MITRE Recommendation 2b: Individual Technologies/Data Collection—Geothermal

- No specific comments.

MITRE Recommendation 2c: Individual Technologies/Data Collection--Solar

- "As to roof-mounted photovoltaic units, MITRE recommends Fairfax encourage the adoption of solar systems where the roof area is relatively large. Staff's response cites the example of the high cost ($56,000) of the small (3 kW) system installed at T. J. High School. That is one example. The same year, a friend of mine living near Herndon installed a $4.1 kW system for a pre-tax credit cost of $44,000. Staff also sites a March 2012 index for commercial (non-residential) solar of 19.41 cents per installed kWh about double our electrical rate. Costs for solar panels have declined substantially since 2009 and even since 2012. The latest residential trend is neighborhood bulk purchasing that reduces outreach and advertising costs for installers such that an additional 15 to 25% can be saved." (Ross Shearer)

- "Staff's exclusive reliance on market price comparisons ignores the health and environmental costs associated with conventional electrical production from coal and natural gas. Much more is at stake than the financial calculations of returns on investment. County energy policy should be formed around a strategy that contributes to the transformation of our energy economy to a sustainable one based on renewable sources and efficiency and that deliberately pushes towards the absolute abandonment by 2050 of our current reliance on fossil fuel forms of energy production used for buildings. The leadership MITRE advocates for Tysons would contribute to this transformation." (Ross Shearer)

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premature and unwarranted." [A September 2014 document entitled "Lazard's Levelized Cost of Energy Analysis—Version 8.0" was included as an attachment.] (Eric Goplerud)

MITRE Recommendation 2d: Individual Technologies/Data Collection—Storage for Load Shifting

- No specific comments.

MITRE Recommendation 3: District Energy

- No specific comments.

MITRE Recommendation 4a: Third-Party Certifications and Performance Guidelines--LEED

- No specific comments.

MITRE Recommendation 4b: Third-Party Certifications and Performance Guidelines—Designed to Earn the ENERGY STAR®

- "MITRE recommends the County address energy use in buildings indirectly by eschewing specific technologies, specifying reliance on Energy Star for attaining overall energy performance standards and encouraging pubic reporting of consumption. MITRE points out that LEED does not "guarantee energy efficiency" and urges that it be paired with Energy Star through the Design to Earn Energy Star program. Energy Star is a recognized brand." (Ross Shearer)

- "The other high efficiency brand I know of is ASHRAE's 90.1-2004 which lacks a marketing label, such as may be conveyed, 'I live/work in an Energy Star building' or '…a LEED Gold building.' Thee (sic) latter claim may be gained where LEED is complemented with Energy Star." (Ross Shearer)

- "The case for Energy Star: In their comments, staff defer to the current policy emphasizing flexibility to allow for appropriate areas of emphasis. The problem I see is that the basic levels of the green building practices under LEED and equivalent do little in the way of operational energy efficiency at their lower recognition levels. The newest version of LEED increased its basic requirement from 1% above code to 6%. While that is a 6-fold improvement and I assume it rides on top of recently adopted efficiency improvements to the commercial code, Energy Star's 35% reduction gives a real push towards the net zero objective noted by MITRE that is the industry's aim for 2030. If it is serious about its commitment to leadership, Fairfax should adopt policies that actively

abet the movement towards net zero. Under current policy Fairfax is condemning itself to wandering among the multitude of other reluctant players." (Ross Shearer)

- "Over-weighting the Benefits of Design and Construction: Energy Star and the branded green building commitments such as LEED are complimentary, but staff's preference for the design and construction benefits of a 'comprehensive green building rating system' (such as LEED's) over the cost saving benefits of high energy efficiency through programs such as Energy Star, shows a bias that is not explained or self-evident. Energy Star's historical average energy efficiency savings of 35% are nearly 6 times better than LEED's 6%. This saves tenants money and often means a better experience for a building's users and visitors. Current policy and staff's defense of it, resembles lost money in view on the future Tysons sidewalk that current policy forbids us to pick up and save. Developers may have influenced this bias. Shouldn't public policy in a democracy be in favor of what benefits the most people? When the public gives something up permanently, developers should be motivated to do much more than LEED Certified in exchange for increased density." (Ross Shearer)

- "It's worth noting in this context that Executive Order 13524 requires federal agencies to lease space in Energy Star certified buildings." (Ross Shearer)

- "Other Energy Efficiency Options: The Planning Commission never considered setting a goal of its own. This could have been done along a straight line between the current energy use and the net zero objective for 2030. I appreciate that the County would want to avoid getting locked into a numerical system of its own making and also to avoid reinventing the energy efficiency wheel, but to ignore any of the versions of the available energy efficiency wheels seems foolish for a Fairfax that is serious in expecting its professed green credentials are perceived as authentic. The American Society of Heating Refrigerating and Air-Conditioning Engineers program (90.1-2004) noted above aims for a 50% energy reduction target. Also, the LEED scoring system offers from 1 to 10 points for reducing energy use on new construction by between 10.5% and 42% above code. Being green means a strong preference for significantly higher operational efficiency and the willingness to incur the additional investment costs of reduced energy needs." (Ross Shearer)

- "Facilitating Green Washing: Favoring the design and construction benefits over higher operational efficiency seems to prime the markets for green washing. On its web site, the architect of Scotts Run Station South states the project's new residential buildings will be "designed for energy efficiency" with LEED Certification. Perhaps the project will ultimately be built to a higher level, but if not, I think some prospective apartment renters could feel deceived when they learn their "designed for energy efficiency" apartment will save them but 6% on their utility bills over a built-to-code competitor, compared to an Energy Star facility's 28% to 40% available in Arlington or Silver Spring. I certainly would, and the County's position trading off Energy Star's higher operational efficiency for the minimum in LEED's design and construction benefits, enables the deception by a

developer who may have easily been persuaded to adopt higher energy efficiency if the incentives had been made compelling." (Ross Shearer)

- "I agree with the Mitre recommendation to encourage DEES. While LEED has many advantages as a comprehensive environmental tool, it does not emphasize energy efficiency, which is the one component of LEED that provides the most direct benefit to the occupant because it lowers their bills. The main goal of DEES on the other hand is energy efficiency, and according to staff there are independent reviews to encourage developers to meet that goal. Staff notes that the EPA data suggest that non-residential DEES projects have a good track record for earning Energy Star. As Mitre comments, 'there is no guarantee that a building designed with efficiency as a priority will be energy-efficient in practice,' but this is the best means available to the FCG." (Linda Burchfiel)

- "Another advantage to DEES over Energy Star is that DEES requires reporting into the Portfolio Manager from an early stage, and if the design earns a low score, the Portfolio Manager can offer suggestions to improve it. It should be noted that, by encouraging DEES, the Portfolio Manager data base will be expanded. If FCG is able to work with the building owner to get access to the Portfolio Manager data, there will be little additional workload for FCG staff." (Linda Burchfiel)

MITRE Recommendation 4c: Third-Party Certifications and Performance Guidelines—Benchmarking with Portfolio Manager

- "Staff advocates a public outreach beyond Tysons to spur voluntary tracking and benchmarking, but staff's objections to public access as consumer information abandons the power of the marketplace." (Ross Shearer)

- In regard to staff's concern that collection of building energy performance data may create "apples to oranges" comparison difficulties (in light of the many variables that can affect building energy performance), "forty percent of commercial buildings in the US use Portfolio Manager, so it already has a great deal of data on different types of buildings and is able to report on a granular level. And the level of detail in the Portfolio Manager will only improve as more building types participate; if use of the Manager is rejected because it is not complete enough, it will never become comprehensive." (Linda Burchfiel)

- Staff has noted that proffers are voluntary in nature and that there may be willingness among applicants to commit to disclosure of energy use information without a broader mandate to do so, and staff has also noted that it may be difficult to enforce commitments to the provision of energy use data. There may be a concern that "probably the only applicants who would agree to such a proffer would be applicants who expect to be very energy efficient and who would want their efforts recognized." "The FCG may get just a patchwork of reports, but that would be the start of a movement. As occupants see the

energy efficient data and realize that certain buildings are especially energy efficient, they would be likely to ask to see other energy data. This would add to public pressure on builders and owners to reduce energy consumption." (Linda Burchfiel)

- Staff has also noted that it currently lacks the resources to collect data. "Many utilities are willing to provide data updates." (Linda Burchfiel)

- "An additional argument in favor of using proffers to encourage public tracking and reporting is that it is the beginning of a process, which will often be successful, of raising awareness among the public. Once the public knows that energy performance data can be made available, there will be public pressure to produce performance data for other buildings, and reporting will gradually become standard. As with the argument encouraging experimental design, it may not always work, but the risk is worth it." (Linda Burchfiel)

MITRE Recommendation 4d: Third-Party Certifications and Performance Guidelines—Net Zero and Passive House

- No specific comments.

MITRE Recommendation 4e: Innovative Energy Proposals

- No specific comments.

MITRE Recommendation 5: Public Reporting

- "MITRE's recommendation to encourage landlords to make energy use public in order to drive efficiency is commendable. Staff perspectives present objections without exploring how to overcome them as other jurisdictions have. For office buildings the sampling can be limited to a common period of time, 6 am to 8 pm for example to overcome daily occupancy differences. For apartments and condos, I feel the objections raised by staff do not apply. In making housing more affordable in Tysons and Fairfax, perhaps the County could first pursue this recommendation for apartment buildings." (Ross Shearer)

- "On the individual level, it is no less important for occupants to have an idea of a building's energy performance before signing the lease." (Linda Burchfiel)