

City of Keene  
New Hampshire

ENERGY & CLIMATE COMMITTEE  
MEETING MINUTES

Wednesday, April 1, 2020

8:00 AM

Virtual Webex Meeting

**Members Present:**

Dr. Ann Shedd, Chair  
Peter Hansel, Vice Chair  
Terry Clark, Councilor  
Jake Pipp  
Ken Dooley  
Cary Gaunt  
Rod Bouchard  
Andrew Dey  
Zach Luse  
Meaghan Rafferty  
Paul Roth, alternate

**Staff Present:**

Rhett Lamb, ACM/Community  
Development Director  
Mari Brunner, Planner  
Morgan Urquia, Community Development  
Intern

**Members Not Present:**

Anna Schierioth

Chair Shedd began by reading the following statement regarding the authority to hold a remote meeting:

“As Chair of the Energy and Climate Committee, due to the COVID-19 novel Coronavirus crisis and in accordance with Governor Sununu’s Emergency Order #12 pursuant to Executive Order 2020-04, this Board is authorized to meet electronically.

Please note that there is no physical location to observe and listen contemporaneously to the meeting, which was authorized pursuant to the Governor’s Emergency Order. However, in accordance with the Emergency Order, this is to confirm that we are:

*a) Providing public access to the meeting by telephone, with additional access possibilities by video or other electronic means;*

We are utilizing the Webex platform for this electronic meeting. All members of the Committee have the ability to communicate contemporaneously during this meeting through the Webex platform, and the public has access to contemporaneously listen and, if necessary, participate in this meeting through dialing the following phone #: **408-418-9388** and entering access code **792 917 239**, or by clicking on the following website address [www.webex.com/login/attend-a-meeting](http://www.webex.com/login/attend-a-meeting) and entering the meeting number **792 917 239** and password **ECC-April1**.

*b) Providing public notice of the necessary information for accessing the meeting;*

We previously gave notice to the public of how to access the meeting using Webex, and instructions are provided on the City of Keene's website at: [www.ci.keene.nh.us/energy-and-climate-committee](http://www.ci.keene.nh.us/energy-and-climate-committee).

*c) Providing a mechanism for the public to alert the public body during the meeting if there are problems with access;*

If anybody has a problem, please call 603-352-5440 or email at: [CommunityDevelopment@ci.keene.nh.us](mailto:CommunityDevelopment@ci.keene.nh.us)

*d) Adjourning the meeting if the public is unable to access the meeting.*

In the even the public is unable to access the meeting, we will adjourn the meeting and have it rescheduled at that time.”

### **1. Call to Order and Roll Call**

Dr. Shedd asked staff to explain how members of the public could participate in the meeting. Ms. Brunner gave an overview of the instructions to join the meeting, and noted that attendees are being asked to participate in “listen only” mode and turn their videos off to help keep the meeting running smoothly. Dr. Shedd called the meeting to order and roll call was conducted.

### **2. Approval of March 6, 2020 Meeting Minutes**

Vice Chair Hansel moved to accept the March 6, 2020 minutes, Councilor Clark seconded, and the motion passed unanimously by roll call vote.

### **3. Energy Plan**

#### **a. Priority Strategy / Action Items for Thermal & Transportation Sectors**

Ms. Brunner announced the results for the priority strategies/action items from last month's thermal sector survey, which she derived from weighted averages. A total of five people responded, three committee members and two staff members. She presented the results using a bar graph, with the highest four items highlighted in yellow and the second highest four items highlighted in blue:

*3.3./2.4- Offer financial incentive program to incentivize renewable energy for residents and businesses.*

*1.9 -Seek grants /funding for other weatherization and energy optimization programs.*

*1.2- Adopt a mandatory Benchmarking Ordinance*

*3.1- Host a renewable heating and cooling campaign (e.g. “Heatsmart” campaign).*

*2.1.1- Explore options for a renewable district heating and/or combined heat and power pilot project.*

*1.6- Consider adopting a local amendment to the 2015 State Energy Green Code, or explore adopting a green code such as the International Green Construction Code.*

*1.7- Launch a weatherization program such as “Window Dressers” to help residents save energy and reduce costs during the heating season.*

Ms. Brunner asked members to reflect on which strategies the City and community partners should focus on first; which strategies will move them closest to their goal; where will the resources come from to implement these strategies; and what are the co-benefits of each strategy?

Vice Chair Hansel stated that the educational piece is critical to getting everyone on the same page, both for the thermal and transportation strategies.

Mr. Pipp stated that he likes item number 1.1 as long as they add “or rent” to the end of the statement “for sale.” He said he also likes the benchmarking item (1.2), but only if they make it mandatory and provide education for improvements to scale up the impact. He noted that he also likes item 1.6 to have energy codes that are higher than the minimum, however, if the codes only affect new construction the scale of impact may not be that significant. In addition, this strategy scores low on “inclusion and social equity” because many people cannot afford to buy a new house. Mr. Pipp stated that item 1.7 was more important for him because it includes those who own or rent in weatherization benefits, and the scale of impact would be higher especially in term of social inclusion and equity. He stated that item 1.9 should not sit on its own and should be bundled in with 1.7, and that they will both require funding. He stated that he rated 2.1.1 lower on the scale of impact as it just explores the option of district energy, but doesn’t include any steps to make it happen. He suggested the wording be changed to include more action. Mr. Pipp noted that he rated items 3.1, 2.4 and 3.3 in the medium range as not everybody can afford to replace a furnace, and many of those incentives are out of reach for people and he would prefer to see education at the top instead as it is highly feasible and equitable and the scale of impacts would be greater than new homes having slightly higher insulation.

Dr. Shedd stated that the educating of contractors and building incentives for heating and cooling infrastructure would cross into several of these potential strategies.

Ms. Gaunt stated that she is in favor of financial incentives as they should aim to make the program attractive to all sectors from residential, business and commercial. She said that offering financial incentive programs is one of the best avenues towards doing that. She added that they need to educate homeowners about the incentives that are out there. She agrees with Mr. Pipp that strategies 1.9 and 1.7 could be combined, and noted that maximizing weatherization is important. She suggested potential partners to engage, including the local community college, the KSC architecture program, and Antioch University. She stated that many efforts start out as optional and end up in the regulatory approach. She thinks the benchmarking ordinance should be mandatory, and she agrees that they need to require reporting energy data as well as report progress towards meeting specific goals, for example, sector specific goals leading up to City goals.

Councilor Clark asked about the mandatory benchmarking ordinance and whether the City has the authority to do that. Ms. Brunner said it is something City Council would have to adopt. To her knowledge, it is allowed in New Hampshire and there are many examples of other New England communities that have already enacted mandatory benchmarking ordinances.

Mr. Dey noted that there are existing programs that have been in place for many years for low-income weatherization programs, for example, Button Up workshops which are an opportunity for homeowners to do weatherization. He said it is important for the City to recognize the existing programs and not duplicate them. He noted there may be particular demographics that may not be well served by the current programs that the City can help with instead. Dr. Shedd stated that there was an in-person Button Up workshop planned for last week, which was rescheduled as a virtual presentation for next week. She agrees with Mr. Dey that the City should amplify existing programs rather than duplicate them. She asked if there are any other comments about the plan for the Thermal sector.

Vice Chair Hansel commented that before they can do the mandatory benchmarking, they would need to establish a protocol for reporting as there are many different thermal measures and all of them are difficult to quantify consistently.

## 2. Draft Baseline for Thermal & Transportation Sectors

Ms. Brunner said she used the same process for the Transportation sector survey results (the four highlighted in yellow were the top four, and the next highest ranked items highlighted in blue). She asked for member feedback on these items.

She highlighted the top strategies:

*4.1 Advocate for more funding the state and federal level for transportation.*

*2.5 Work with the Keene School District and local bus company to encourage switch to electric school buses.*

*1.2.2 Work with Southwest Region Planning Commission and other community partners to explore options for a multimodal transportation center in Keene.*

*1.2.1 Continue to support the City Express and Friendly Bus program.*

*1.1.1 Incorporate the adopted City of Keene Complete Streets Design Guidelines (2015) into the City's street standards for new streets and develop Complete Streets standards for reconstruction of existing streets.*

*1.1.2 Pursue grants/other funding to supplement the cost of maintaining existing pedestrian and bicycle infrastructure (e.g. \$5 vehicle registration fees).*

*3.1 Encourage location and concentration of land uses and urban design (i.e. follow "smart growth" principles).*

*1.1.3 Pursue grants and other funding sources to install new bicycle and pedestrian infrastructure, including sidewalks, crosswalks, multi-use trails and bicycle parking (e.g. TAP, CMAQ, MAST Complete Streets grant, RTP grant, etc.)*

Ms. Brunner asked for member feedback on the strategies.

Dr. Shedd stated that only one relates to the electrification of the transportation sector; the one related to promoting electric buses with the school district. She asked about the level of impact that type of strategy would have – is there data on how many people use the school bus?

Ms. Brunner said that Morgan Urquia, Planning intern, has been working on a baseline for the thermal and transportation sectors and can go into more specifics on the school bus fleet. However, information about the number of students that ride the bus is not available now. Staff have contacted First Student to request this information, but have not heard back.

Mr. Pipp stated that he likes strategy 1.1. and his question refers to the Complete Streets guidelines and the implementation of those guidelines for new streets. He said he cannot imagine there are many new streets. He said strategy 1.1.2 to maintain existing infrastructure for pedestrians and bikes is important, but he imagines that the City has that as a part of their budget already, so adding new infrastructure may be more important in terms of scale of impact. Mr. Pipp said there isn't much there about electrifying and it could be extended to the Friendly Bus and the City Bus program, however, that may not make a big impact as not many people ride the bus currently. He said increasing the charging stations in public parking areas is important, as fueling for electric vehicles is not as widely accessible for electric cars as gasoline is. He said strategy 4.1 is important,

and considering access and safety standards for all modes of transportation in the review of development and redevelopment proposals is also a high priority for him.

Ms. Brunner responded to the question regarding the Complete Streets guidelines. The City adopted a resolution that has set forth standards and guidelines that are not mandated; however, the City is using them whenever possible in existing construction projects. The standards are geared towards new streets. She said the City could incorporate the Complete Streets standards into the standards for construction of new roads in City Code. In addition, the City could consider applying these standards to the reconstruction of existing streets, however, it may make sense to create new standards for those because many of them have constraints that are not under the City's control, such as width and topography, that limits the types of Complete Streets treatments that can be applied.

Ms. Brunner stated that she has received a few comments and questions from the public; if there are members of the public present, they can send questions to Ms. Brunner. Mr. Bouchard left the meeting.

Ms. Gaunt said in regard to strategy 1.2.1, KSC has done a survey and the City Express bus is not well-used, and it is because they do not go where people want them to go. She would only support that item if it were tied into an evaluation of the program, including the bus routes and how they can best serve the community. In addition, many people go back and forth between Keene and Brattleboro and there are a lot of commuters who do not have an option for mass transit. Although this is not a strategy that is currently listed, she thinks that providing a transit option for commuters between Brattleboro and Keene would be helpful. She is also a big proponent of maintaining and expanding the walking and biking infrastructure. She stated that KSC faculty members and staff have inquired about creating infrastructure for EVs as they do not have any charging stations at KSC, so they should ensure that the City of Keene transportation infrastructure supports the need of walkers, bikers and those people trying to transition to EVs.

Mr. Dey stated that it is challenging to select the top priorities as many of the options were somewhat similar in their effectiveness. The difficulty in scoring is reflected in the lack of standard deviation between the options; there was also not a broad participation in scoring of these items. He said Ms. Brunner has done her best, however, views may change and adapt as part of the discussion which is the great part of participating on the committee. He said the strategies that are the most compelling to him are those listed under section 2, Accelerate the shift to electric vehicles. Compared to the other strategies within the Transportation Sector, these are relatively short-term, highly visible and achievable with clear-cut deliverables. He said he is all for electrification of transportation and he would rate accelerating the use of EVs as highly important.

Councilor Clark added that a more robust publicity campaign for the City Express Bus is important. The budget for the City Express is very low, so he would support increasing

the City's contribution to the bus. He added that it is also very important to ramp up support for the electrification of the City Express and school buses as well.

Dr. Shedd said encouraging intercity transportation and improving service and ridership for the City Express Bus seem to be big themes for members.

Vice Chair Hansel stated that he agrees with the comments that have been made. He also looked at the survey from a higher perspective and tried to rank the items within each of the four categories. He said that each one of the categories is important and were selected for a reason; for example, reduce the number of vehicle miles traveled, accelerate the shift to EVs, and promote efficient growth patterns. He said he would select strategy 3.1 from the latter category as the top priority. Vice Chair Hansel noted that the City will be facing a reconstruction within the core of the City when the Arts and Culture corridor moves forward, and incorporating an intermodal transportation might be a timely thing to advocate for and is an urgent consideration for the City due to the timing.

b. Draft Baseline for Thermal & Transportation Sectors

Ms. Urquia stated that she would review the thermal sector first and then the transportation sector. For the Thermal Sector baseline, staff used data from the City's Assessing Department and started by splitting it up into three broad categories: 1. Residential units (~50% of sq. ft. heated space), 2. Commercial and industrial units (~30% of sq. ft. of heated space), and 3. Public/non-profit, government, and education units (~20% of total sq. ft. heated space). She said in each of the three categories, the goal was to organize properties by sector/sub-sector and then record properties in square footage based on heat fuel type, fueling system type, and cooling system type.

*Residential sector-* According to data from Assessing, 78% of residential living space is heating with heat fuel. Ms. Urquia said almost half of households in Keene are renters and that presents a challenge in convincing people to have their heating systems redone. She said the majority of people do not have cooling systems – 84% of living space is not cooled within this sector – however, that may need to change in future with the increase in high heat days.

*Public, education and government sector-* Ms. Urquia said that, for many buildings in this sector (59% by area of living space), the heat source is unknown. Assessing lists the heat source as "Typical" in their data system when they do not know the heating fuel type. For example, KSC's heating fuel is unknown, which represents a large proportion of the "Typical" category. This can skew the data. She was able to fill in some of the missing information by reaching out directly to organizations; for example, Ken Dooley provided data for the school system. Hot water/steam is the leading heat system type. More properties in this category have cooling systems than in the residential category (58% of living space is cooled within this sector). She noted that there is some overlap in the heating system type; for example, "hot water," "hot water/steam," and "steam" are all

listed as separate heat system types. She noted that staff will work on this and said they can look to streamline duplicate categories.

*Commercial and Industrial* – Ms. Urquia noted that this category includes “mixed use” properties, which means it is a building that has both residential and commercial space. The most common heat fuel is heating oil, and the most common heat system is hot air followed by hot water/steam. This sector has the highest proportion of space that is cooled (70%). Mr. Pipp asked what “Typical” means; Ms. Urquia said that the typical category for heat fuel type means “unknown.”

*Assumptions in data analysis*- Ms. Urquia explained some of the assumptions that staff made when looking at the Assessing data. First, they decided not to use total area for buildings, because some of that space may not be heated (for example, warehouse storage space). Therefore, in this analysis, the square footage refers to living area, not total area. Another limitation of the data is that multiple heating systems are not accounted for – the Assessing data only includes the primary heat system and primary heat fuel. This leaves out wood stoves and pellet stoves, for example, that people may use as their primary heat source with a traditional boiler system as backup. She said she talked to Assessing to see if there is a way to get data on wood stoves, back-up solar thermal, and other secondary or backup systems, but there isn't a good way to get that information at this point.

Ms. Urquia also noted that the data staff received from Assessing required a good amount of analysis and checking. The data from Assessing has its own categories, so she had to go through and organize the data into the categories presented today. In addition, the Assessing categories sometimes have discrepancies/inconsistencies, so she had to go through the list and look up individual properties to figure out how to categorize them. For example, Brewbakers was listed as “charitable building” under style and “retail” under occupancy. This requires a good amount of time to go through, which brings up an issue of repeatability in this project as the margin of error will be greater because there is a level of subjectivity on the part of the analyzer. All the data is coming from the Assessing Department.

Vice Chair Hansel stated that the question of repeatability is an issue, and this points out both the important and the challenge of benchmarking with so many different fuels and building types. He asked how they will make benchmarking fair and equitable for everybody. He stated that there may not be a baseline of fuel consumption for thermal for the plan, but the plan can include how to get to a baseline in thermal moving forward.

Ms. Gaunt stated that the data shows a heavy reliance on oil, especially in the residential sector. She said this was previously the case with KSC, but they were able to partner with a regional firm to get 100% refined, used vegetable oil to replace their highly-polluting #6 and #2 heating oil. They have been very pleased in working with this company, and she is wondering if there might be interest in making this product (LR100) more widely available to customers in Keene. She said this can be a great way to get used vegetable oils from restaurants in Keene; for example, all of the used vegetable oil from their dining

commons goes into their heating fuel. She said maybe they can look into how to spread this model in Keene. Ms. Morgan replied that the most helpful things about the data is that it shows them what they are up against and can help inform the strategies.

Dr. Shedd thanked Ms. Guant for her comments. She said she agrees with Vice Chair Hansel that the issue of how to measure usage will be a challenge. Ms. Morgan said she is in favor of the mandatory benchmarking as it will provide more accurate data for heating and cooling fueling consumption, rather than deriving estimates from average house consumption.

With no more questions about the thermal data, Ms. Urquia moved on to the baseline data for the transportation sector. She shows a slide that lists the metrics used for this sector:

- 1: Total number of vehicles registered in Keene and # of vehicles per household
- 2: Fraction of total light-duty vehicle registrations that are electric or hybrid vehicles
- 3: Transportation Mode Share (percent who drive, walk, bike, etc) for work/school
- 4: Transit Ridership
- 5: Number of bus stops/ miles of bus route
- 6: Miles of bike/ped pathways maintained year round
- 7: Number of EV charging stations by type
- 8: Proportion of residents living in locations with mixed land use
- 9: Number of roundabouts compared to signalized intersections

*Vehicles-* Ms. Urquia said that this data was obtained from the NH Department of Environmental Services (NH DES). The majority of light-duty vehicles (motorcycles, passenger cars, and passenger trucks under a certain weight) are gas-powered (92%). There are 222 conventional hybrids registered in Keene, which only makes up 1% of the total registered vehicles. There are 15 registered battery electric vehicles, and 101 registered plug-in electric vehicles. The remainder are medium and heavy duty vehicles.

*Charging Stations-* There are only five electric vehicle (EV) chargers in Keene, and all are level 2 chargers which gives you a full charge in about eight hours. She said that there are a number of level 2 and level 3 chargers within a 30-mile radius of Keene, mostly on the Route 91 corridor in Vermont near Brattleboro and Putney.

*Infrastructure-* Ms. Urquia said that the next metric relates to infrastructure. The top chart shows infrastructure to help support alternatives to motor vehicle travel, including the miles of bus routes, the miles of sidewalks maintained year-round, the miles of multi-use trails, the miles of in-street bicycle lanes, and the miles of in-street shared bicycle lanes (i.e. “sharrows”). There are 39 bus stops (however, the City Express bus can be “flagged” to stop anywhere along its route). Ms. Urquia noted that the bus starts running at 8:00 AM and ends at 4:30 PM, and it takes an hour to complete the route, which gets to the discussion the group had earlier about improving the bus service to increase ridership. There are 15 enhanced crossings and 32 road crossings along bike/pedestrian paths in Keene. This data is from Will Schoefmann, the City’s GIS specialist, and from the

Monadnock Alliance for Sustainable Transportation (MAST). The second chart shows the number of roundabouts compared to signalized intersections in the City. Roundabouts help reduce pollution by improving the flow of traffic; there are currently 6 roundabouts and 20 signaled intersections in Keene. However, there are two roundabouts planned for the Winchester Street corridor. After those are built, there will be 8 roundabouts and 19 signalized intersections in the City.

*Transportation mode share*-Ms. Urquia said that this data comes from American Community Survey (chart on the left) and 2000 U.S. Census (chart on the right). About 73-76% of people in Keene are driving alone; 8%-11% are carpooling; about 15-70 people use public transport; 6%-8% are walking, and she is assuming that biking and scootering are captured under the “other” category (1%-4%).

*Population density*- Ms. Urquia referred to a chart that shows percent of properties that are within the High Density District or a mixed-use district (by number of properties, not square feet). Out of 6,485 properties assessed in Keene, 719 are in high density zones and 207 are in mixed-use zones. Census data gives us a better picture of where people work and live in in Keene. Ms. Urquia showed density maps displaying where people live in Keene (map on left) and where people work in Keene (map on right); however, she noted that many people who live in Keene work elsewhere, and many people who work in Keene live elsewhere. She showed a map from the Census site that show that 12,810 people come into Keene to work, 5,646 leave Keene each day to work elsewhere, and only about 5,240 both live and work in Keene.

Ms. Urquia stated they are still waiting for data from First Student about how many students are using the school buses to inform the electrification of the school bus fleet strategy.

Dr. Shedd asked if they are counting only light duty vehicles registered in Keene, does that leave out oil delivery trucks and City trucks?

3. Consultant Webinar Presentation- Dr. Shedd said that the energy plan consultant will be presenting tomorrow, April 2 from 12:00-1:30 pm. The link to register is on the City website and in the meeting packet. Ms. Brunner encouraged everyone who is able to attend, and noted that the presentation was originally going to be an in-person presentation. This is the ECC’s chance to ask the consultant directly about the work they have been doing with the City over the past six months or so. After this presentation, the consultant will submit a final draft before the next ECC meeting, so this is the only chance ECC members will have to ask questions before the report comes out. Dr. Shedd asked if people will be able to ask questions. Ms. Brunner said that the presentation will be live; public can ask questions and they may try do some polling. They are also going to record the presentation, but it may or may not work depending on the technology the consultant uses. The consultants will also present at the City Council meeting tomorrow evening, however it will be a much shorter presentation (about 10-15 minutes, plus time for Q&A).

4. Online surveys for Residents and Businesses- Dr. Shedd said that the initial results of this survey were shared at an earlier meeting, and asked Ms. Brunner for an update. Ms. Brunner said that this survey was a joint effort of the City and two Keene State Colleges students who will be using the results for a school project. The students will be downloading the survey responses at the end of this week to conduct their analysis. So far, 55 people have filled out the survey, which is a pretty good response. However, most responses have been from residents in the middle to upper income ranges, and the survey is trying to understand how energy costs affect all residents, including low and moderate income households that may spend a higher percentage of their income on energy. She encouraged members to complete the survey and share it with their networks. The business survey has only gotten five responses so far as they need to publicize that one more.

5. Energy Plan Outreach Options for April and May- Dr. Shedd said that this item relates to shifting community outreach efforts in light of the new coronavirus pandemic. Ms. Brunner said that the April Energy Plan workshop has been canceled due to the Covid-19 State of Emergency. The goals of that workshop were to get input on how Keene should define “renewable” in the context of the energy plan, introducing proposed strategies and doing some education about what they are, getting general feedback on strategies, and in general to provide an update on this project and make sure people are aware it is happening. She was hoping to have a discussion with the committee about ways they could continue to engage the public and get feedback using remote/virtual options. In the interest of time, she asked members to email her with ideas for outreach during the time of Covid-19. She asked members to think about how to reach those goals using electronic outreach and engagement.

6. UNH Sustainability Fellow Update – Ms. Brunner stated that the City has selected a candidate for the UNH Sustainability Fellow program. The Fellowship is intended to focus on outreach; one of the key deliverables is the visual implementation road map that will accompany the Energy Plan, so it is very important to have a draft plan ready by June 1. It is very likely that the program will be done remotely. Major milestones for the program include orientation during the week of May 25 at UNH, starting work with the City the week of June 1, midterm presentation at UNH the week of July 6, final presentation at UNH the week of August 3, and wrapping up the fellowship the week of August 10.

4. **New Business- No new business**

Dr. Shedd asked if there was any new business that committee members would like to add to the agenda for next month. No one had any new business to add to the May agenda.

5. **Next Meeting: Wednesday, May 6, 2020**

Dr. Shedd said that the Committee may be using a different virtual platform for the meeting next month. She asked members to direct questions and comments to Ms. Brunner via email.

6. **Adjourn-** Dr. Shedd adjourned the meeting at 9:32 am.

Respectfully submitted by,  
Ayshah Kassamali-Fox, Minute-Taker

Reviewed and edited by Mari Brunner, Planner