

Summary Notes – DRAFT
Commercial Advisory Committee (CAC)
Tuesday, April 25, 2017



Attendees:

In Person:

John Wilson – BPA
Deb Young – NorthWestern Energy
Oliver Kesting – Energy Trust of Oregon
Sinh Tran – Snohomish PUD
Kevin Smit – NWPCC
Peter Meyer – Tacoma Power

On Phone:

Joe Fernandi – Seattle City Light
Lorri Kirstein – Avista
Mattias Jarvegren – Clallam PUD
Michael Gilbride – UW Integrated Design Lab
Tom Anderson – Puget Sound Energy
Blake Shelide – ODOE
Jennifer Pope – Idaho Office of Energy & Mineral Resources

NEEA Staff: BJ Moghadam, Sepideh Rezaia, Mark Rehley, Kim Hughes, Dulane Moran, John Jennings, Elaine Miller, Ken Baker, Maria Murphy, Christian Miner, Greg Kaleka, Alisyn Maggiora, Julia Harper

Welcome, Introductions, and Housekeeping Items

- A. Meeting packet review
- B. Informational updates

Commercial Portfolio Update

Sepideh Rezaia (NEEA) gave an overview on the commercial portfolio. *The desired outcome is to level-set on the current portfolio.* Highlights included:

- Introduction of Christian Miner, new Senior Program Manager who is handling the Commercial Real Estate and Window Attachments programs.
- Maria Murphy is back from maternity leave; TTTA has transitioned to Anne Curran and Maria will be focusing on new commercial programs to bring into the portfolio.

2017 Q-1 Progress Review

- A. Review of the Commercial Lighting market (refer to [slides 8 and 9](#)).
- B. Commercial Building & New Construction Markets (refer to [slides 10 and 11](#)).

Presentation Highlights & Discussion:

- 1) **BetterBricks newsletter:** Digital tools are featured here so keep your eye out. Online subscription access is available [HERE](#).
 - a) NorthWestern: *How can we tell who from our organization is on that list and getting that information?* **ACTION ITEM: NEEA staff to check with Natalie Fish (NEEA).**
- 2) **Window Attachments Program Change Document**
 - a) Refer to page 4-7 memo in [packet](#)
 - a) First time we're presenting changes to a program in this format; member feedback is helpful so please let us know how well this works for you. Direct questions after the meeting to Sepideh and/or Christian.
 - b) NorthWestern: Savings will still be differentiated and tracked separately between commercial and residential, correct? NEEA: Correct. From a savings perspective, and any costs reported, we will make that clear.
 - c) Tacoma Power: *How do you see the split b/w commercial and residential on cost?* NEEA: Hard to say, maybe 50:50 right now if we add the baseline characterization on

the Residential side. Depends also on the barriers on the Residential side. Once the product hits the market, we need to evaluate.

3) Commercial/Industrial SEM Infrastructure

- a) SEM hub is now a one stop shop: www.semhub.com
- b) Fall SEM collaborative is October 24.
- c) Workgroup meeting day before Efficiency Exchange (May 8) in the Double Tree
- d) Industrial Summer Study in Denver August 14-18; will precede conference sessions with a one-day national collaborative on strategic energy management. Northwest and Northwest collaborative leadership will be representing there.

4) BOCE

- a) NorthWestern: Appreciates the support and hard work. If it hadn't received the intervention by NEEA, we wouldn't be as far along in Montana. Did a cohort with the school districts.
- b) NEEA: Piloted a hybrid option for the course, look forward to seeing whether that's more effective in getting enrollment.

NEEA: Are these overview CIA reports at the intro of each CAC meeting working for you?

- 1) ETO: Like it; helpful.
- 2) BPA: Nice to have the snapshot before we dive into content.

Commercial Building Stock Assessment (CBSA) – Status Update

Dulane Moran (NEEA) presented the update. *The Desired Outcome is awareness of CBSA status and opportunities for input.*

Presentation Highlights:

- A. Two work groups involved in this.
- B. Most information is accessible on [CONDUIT](#). Search CBSA, select "[Planning for new CBSA begins](#)" [page](#) has latest updates on their activities, including work group meeting summaries and input evaluations from each stage (there are three stages).
 - 1) There are over 600 variables available in the CBSA, so the site provides some helpful methodologies and resources for how to track proposed changes in study design and building variables. A web-based application has been created to facilitate input. Links to current versions are on the Conduit page, guidelines and instructional videos are available in an instruction tab in each app.
 - 2) If you want to know if someone from your organization is a member of the CBSA work groups or receiving information via an interested parties distribution list, contact Dulane Moran directly (DMoran@neea.org).

Discussion:

- 3) Tacoma Power: *When do you expect final results to be published?* NEEA: End of Q3 2019, but may be Q4 of that year. Should be in time for the next Power Plan.
- 4) NorthWestern: *The updates for RBSA and CBSA were included in the business plan, but with Industrial, we're not ready to do that this time, correct?* NEEA: Correct.
- 5) Northwestern: *Will you do state-specific reports?* NEEA: worked well last time so we expect to do the same, but we've not formalized the reporting structure yet. There will be a hands on work group in the fall; looking for utilities to assist in recruiting building managers and owners to participate. Northwestern added that this also helps facilitate greater relationships.

CAC Member Share-out

A. **Snohomish PUD:** (listen to this again)

Lighting still a big project for us. Rebates: just added new measures from BPA on Heat Pumps, DHP and thermostats. Custom projects are slowly moving along. Pay for performance is going to happen, which is a pilot; working on recruitment right now. This is an existing building activity).

B. **ETO:**

Not many program changes. New Construction has had record enrollments. Existing Buildings looking good as well. Lots of activity in multifamily and schools (due to bonds). Existing Buildings seeing activity in healthcare, grocery. Working on redesign of pay-for-performance program; was trickier than anticipated. Plan to launch training for PFP allies; certify folks to deliver PFP. Targeting 6 customers, which got delayed by operational/staffing factors. Training for allies involves high-level regression analysis at the meter level; every measure has to be cost-effective. Also challenges around transition between existing condition and replacement activities; need to get more training on that. Also changed the incentive and are adding the capital retrofits. Kim Crossman on ETO Industrial side is leaving the organization, they are looking for a good replacement. PFP presentations will be at ETO Conservation Advisory Council meeting May 3, and at EFX.

C. **Tacoma Power:**

On track for exceeding 2017 target based on what's completed and under contract. Have a couple positions open (res coordinator, sr energy conservation engineer in CI group). Added prescriptive measures to BPA DHP and other HP related small HVAC measures. Brought new marketing materials; focus on staff and their support/expertise. Working with BPA's team on Com SEM.

D. **BPA:**

New Commercial program evaluation process is live and final decision is coming down soon. Majority of BPA's Option 1 utilities will get proactive field services. Partnership with Seattle, Tacoma, Snohomish on Commercial SEM. Recently marked October as key timeframe for multiple activities; overhauled a dozen measures, brought in new "qualified" measures in efforts to significantly simplify processes. In the process of updating lighting calculator for Oct 1 release: significantly lowering incentives for TLEDs, mobile-based and medium-based screw-ins. LLLC incentives (low and high bay), alternately, will go up significantly (based on NEEA recommendation). Hard-wiring Trade-Allly designations so they can more fluidly report on that. Recently realized 80% of custom projects are only making up 17% of organizational portfolio, but all are being metered, which is costly. This is getting an overhaul, now custom projects under 200kwh will only get engineering calculations without metering. Emerging Tech is interested in HRV right now. Continuing to partner with NEEA on that and have two sites for testing this summer (one in Kalispell, MT); ties into TTTA. Brought "Lighting Market Intelligence Report" (new marketing material) to share.

E. **NorthWestern:**

Before next CAC, end-use studies across sectors/fuels will be available. Avoided cost went up a little this year. Won't see too many changes in programs as a result. Launching program updates July 1. Had an engineer resign and one person retire. Expect to be fully staffed in May, for a total of six employees. Will celebrate 25th anniversary of on-site home energy audit program (includes a commercial component) this year.

- NEEA (Kim Hughes): Is the end-use study done every 2 years? NorthWestern: Done about every 5. It's complicated. In some markets they're electric, some they're gas, and in some they're both. 5 years on end-use, 5 on potential and gas will be next year. Also had a contractor to do a comparison to the Power Plan and to the previous end-use study, which will address changes to technologies. Comparison will be available sometime in May.
- NEEA (John Jennings): Can you do updates in between the end-use load studies? NorthWestern: Bringing in new measures is more driven by what happens with avoided cost. Have to see a big change in a measure to go outside of the potentials assessment. If it

wasn't in the potentials assessment, it would be hard to bring it in between assessments unless there was really solid information. We also can't offer a program until it's proven as cost-effective; that's what we look to NEEA for. *Do others have this?*

- ETO: We can, as a pilot on the edge of cost-effectiveness.
- Tacoma Power: We have a new approach in 2017 on cost effectiveness. In addition to analyzing Total Resource Cost, also look at utility cost paths. Incorporating some utility cost compliant measures into the mix. *NEEA: If you're running pilots – do they have to meet the same c/e level?* Tacoma Power: Don't run a lot of pilots in CI group.
- Northwestern: The only thing we have were cost-effectiveness is not a measure-by-measure basis is our funding of NEEA. We measure that on a portfolio basis. This is also banking on getting cost-effectiveness on incoming programs in the longer-term.
- Interesting to point out that some utilities can have up to 10% of their budget allocated for pilot programs.

F. NWPCC:

Highly engaged in CBSA process at working group level. Action item in 7th Plan regarding underserved customers (hard to reach) – trying to figure out how to access data and link up with utilities. Two-phase action plan: 1) determine whether a market is underserved (current activities), 2) how do you design programs to meet that (estimated for next year). Meet May 11 with many utility analysts to start combing and combining data. Hope to have by end of year a collection of data and set metrics for how to go about this. ETO is the lead on this. This is focused mostly on residential, but there is some commercial involved as well.

G. Idaho Office of Energy Resources:

Accepting nominations for 2017 Idaho awards for leadership in energy efficiency.

H. Seattle City Light:

Working on PFP programs. Will be moving from prototype of 1 to a pilot center of 5; will be recruiting for that over the remainder of the year. Finalizing design for deep retrofit PFP program, working on synthesizing feedback from a workshop in January. Will be having another workshop on workforce development, tentatively June 12 - looking to roll out this year; recruiting for that for about 10-20 buildings. Working on a tune-up accelerator program (DOE grant); will apply to buildings 50,000-100,000 sqft – will move to \$/sqft incentive structure for assessment, and different amount for the action. Working on RFP for virtual audit component for that subset of customers. Building a retro-commissioning program to support tune-up ordinance. Have a UW IDL education series kicking off this week, which is a training program on how to use energy modeling earlier in the design process to achieve deeper savings. Making changes on weatherization programs – changing incentives on installation and aligning window incentives with PBA measures. Developing a prescriptive program earlier in that process – minor changes to a joint-utility advanced utility rooftop control incentive that they'll be rolling out soon. Exploring a mid-stream commercial lighting offering, working with Elaine Miller (NEEA) on measure mix on RWLR program.

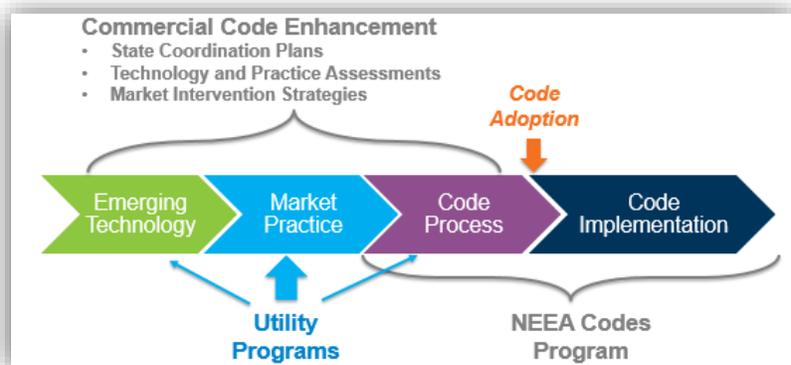
I. Clallum PUD:

Strong couple years with updated NEEA numbers that just came out. Looking to clear 120% of Energy Independence Act target, which was our strategic target for the biennium. CI budget is committed for the year, now working to cue up other projects for 2018. More internal work to strategize for the future and show value of conservation work that they do.

Commercial Code Enhancement (CCE) Scale-up Review

Kim Hughes (NEEA) presented on the initiative. *The desired outcome is for CAC to have an understanding of the Commercial Code Enhancement initiative and provide support for a Scale-up (SA) Milestone vote at RPAC on May 17.*

Presentation Highlights:



Primary topics covered included:

- Initiative Design and Description
- Roles and Responsibilities
- Impending RPAC vote

It's important to note that the CCE initiative is different from the NEEA Code program as it focuses on development of energy-efficient strategies and technologies for implementation in utility programs as well as on future state and local energy codes.

- 1) **Primary Market Opportunity and Barriers** include: a) an opportunity to coordinate the fragmented regional voluntary programs, b) preference for business as usual for developers and builders, c) lack of proof of viability and affordability for proposed technologies and practices, and d) resistance to change among code officials.
- 2) **Intervention Tactics** include: a) state-specific coordination plans, b) technology and practice assessments, and c) market intervention strategies.
- 3) **The Desired Future State** is that market practice leads code adoption and that there is alignment between market practice, code adoption and utility programs.
- 4) **Initiative Outcomes** include: a) greater simplicity of codes, b) market practice leads and informs codes, c) strategic partnerships between utilities, jurisdictions and the design and construction industry, and d) lower energy use.
 - Ken Baker (NEEA) added that the term is progressively effective, we want to continue to learn as it becomes more effective cycle after cycle.
- 5) **Value to NEEA Funders** includes: a) greater ability to proactively design programs with future code changes in mind, b) Increased ability to capture energy savings and influence code, and c) potential for greater compliance by a better prepared market.
- 6) **Proposed Funder Roles** are key to this program's success. This can come in the way of Time (State Coordination Plan), Information (technology assessment process) and Coordination (market activities).

Discussion:

- B. Seattle City Light: *On budget, no additional funds are necessary for this, correct?* NEEA: That is correct, existing funds are available for this. However, if there were additional things funders want beyond that, we would need to negotiate that.
- C. NorthWestern – Appreciates the clarification on the budget.
- D. BPA: Regarding **Desired Future State slide** – Question to Washington utilities: *Is it fair to say in Washington's more progressive code where someone is making a local-level choice, for those things that get left off the table by the building owner, there could be another utility function where the utility picks back up with "unselected options?"*
 - 1) NEEA: Anything in options package is considered as being in code and baseline, but some utilities incent the non-selected options since they would not have been in the code building.

- 2) Tacoma: Requirement in Washington is to pick two (those are part of the baseline), but remaining would be eligible for utility funding.
 - 3) NorthWestern: At the point you're adding those additional measures, it's above code. So from a utility perspective, the ideal would be that the customer leaves the options that have higher energy savings but more cost-effective so you can provide an incentive to them to go above code and get the energy savings associated with that (since utilities pay for going above and beyond code). Knowing that a new building is going into your territory, it would be ideal to go to that customer and work with them to select the optimal options.
- E. Tacoma Power: *Regarding the baseline on the savings estimates on page 16 - are these (at least the Washington portion) going beyond what's already in legislation? Is the baseline the current code or is it the anticipated legislative code cycle?* NEEA: These are beyond the most recent adoption in WA. The baseline is as if the initiative didn't exist, it would include the legislated rampdown of WA code as the baseline, so we're counting anything beyond that. Greg Kaleka (NEEA) clarified that savings rate baseline equals the previous code (for individual state codes); then our total regional savings is what's above the previous code cycle in all states combined. NEEA's moving baseline is a feel for what would happen without NEEA/partner intervention. With commercial code, we've tried to take a conservative approach by taking a flat baseline for the life of that code cycle, then in the next code cycle the new baseline is 100% of the previous cycle.
- F. NorthWestern: Wanted to mention 1) small group in Montana working on commercial code issues, and 2) looking at how Montana lags and how they can better participate.
- G. Round the table indication of support:
- 1) NorthWestern: Support at CAC level; will continue discussions in preparation for RPAC.
 - 2) Tacoma Power: Generally on board. Wants to know how the \$1.5 million will be spent; will recommend to RPAC member that we support the effort in the meantime. ***ACTION ITEM: NEEA (Kim) will share proposed budget with Tacoma.***
 - Tacoma Power: *How does this differ from Emerging Tech work?* NEEA: Their work is focused much earlier in the process. EMERGING TECH → CCE → CODE
 - BPA: *Where would HRV fall in this in the context of Tacoma's question?* NEEA: It's a best practice, it's really no longer an emerging technology, but we need to look at the best practice use of it in a dedicated outside air application and assess that further. This tends to align more on code process than on specific technologies. Want to identify who is using the process, how they're using it and how effective that is, and that assessment is done at the initiative level. If there's enough of a product out there, and enough of a market, we write code language around it and propose it for incorporation into code. Because the DOAS-HRV work is unique, High-efficiency VAVs would be a better example.
 - 3) Snohomish PUD: Supports the initiative. Looking to NEEA to help make codes easier to adopt and implement.
 - 4) ETO: Generally in support. Not seeing some of their previously discussed concerns in the documentation on roles and responsibilities; would like to see more information in **Sec 6** on "potential overlap" and "emerging technologies." All lines up as expected; want just

want to make sure it's documented now. ETO's desire is to work more on the Emerging Tech side of process. Kim (NEEA) clarified that it's also expected that will be documented in the State Coordination Plan, to be reviewed and updated annually.

- 5) BPA: In support. Would like to see some involvement on their (BPA's) end in case studies (partnering in identifying the right sites/case studies). *For larger utilities, how big of a driver is this (a code-focused initiative) for you?*
 - Seattle City Light: It's a big deal for us. We're focused on 1) what has the influence of Seattle code been on evolution of WA state code and 2) what is the gap – how much additional savings are coming out of Seattle code relative to state code. We're generally in support of the CCE effort. Will discuss more internally before RPAC and will be ready in May to be clear on their position. Reality is that code is ahead of the market in Seattle and Washington and it should be the other way around and we're playing catchup.
 - NorthWestern: BPA should be heavy on this.
 - a. BPA: mandate for small-med utilities isn't there so it will be hard to prioritize this.
 - ETO: Huge part of what they do, so this aligns well.
 - Tacoma Power: Not a major piece since most of their impact is Industrial.
- 6) BPA: Overall support the effort.
- 7) NWPC: Supports it; been involved in the front part of the effort so familiar with it. Appreciates the "Desired Future State" slide/graphic – helps clarify how it fits.
- 8) Oregon DOE: No reservations, support the initiative.
- 9) Idaho OEMR: No comments.
- 10) Avista: No reason not to support.
- 11) Clallam PUD: Support it, but only concern is general need of support for code enforcement, being a relatively small utility.
- 12) Puget Sound Energy: Will recommend to RPAC member to support. Want to make sure that this effort continues to align with member utility interests. On the state coordination plans – *did we look far enough ahead so that the roadmap we create can be useful for utility programs as well and not just the code change process*. Will be important for this to look ahead quite a bit to provide the most value to the members. (NEEA) – It will look out 2-3 code cycles when investigating technologies and practices.

Reduced Wattage Lamp Replacement Update

Elaine Miller (NEEA) presented on the program. *The desired outcome is for CAC to understand the recent successes and challenges facing the program, particularly as planning for 2018 shapes up this summer.*

Presentation Highlights:

- A. Platt and North Coast have been major drivers of the increased market share (now at 27%) on LW T8 sales. Home Depot – Pro Desk (89 branches) will come on board May 1.
- B. Need to reinforce critical value that stock change has on flipping market share.
- C. Market trends: Q1 2017 are already ahead of all of 2016 on both TLED and low watt. There's evidence that TLED sales are slowing, but when speaking to vendors there's still significant sales.

- D. Key question, particularly for 2018 planning: *At which point do we stop intervening in the market and step back?*
- E. Observing declines in overall fluorescent sales at 14%, not 10% as was estimated in National Electrical Manufacturer's Association (NEMA) data, so we adjusted our savings based on the faster rate of decline; will need to look at that closely again soon.
- F. Moving away from calling it a lighting platform and calling it a distributor platform – there are other things these market partners sell that we can try to influence (e.g. industrial products).

Discussion:

- G. NorthWestern: *We know we've got the big guys, what is our opportunity remaining with the smaller players?* NEEA: We have thought deeply through the upcoming market planning and evaluation reports (MPERs) about the individual players and should be able to look at the differences and compare in the data set on LED adoption vs. fluorescent potential remaining; you're right, that should figure into our planning for next year.
- H. NorthWestern: *Have you also looked at restocking practices by firm? Are we concerned about loss of use on low wattage units - i.e. paying for savings that would never occur?* NEEA: Haven't heard that yet but worth asking distributors. May consider digging into this in evaluation.
- I. NEEA: *How much variation is there on pricing of TLEDs?* Not much in the region for the most part.
- J. BPA: *What's the financial upside to manufacturers on this?* NEEA: It's a combination; 1) get a monthly report of their ranking 2) getting money from NEEA for incentives. *There is no incremental cost between the 32w and 28w, correct?* NEEA: Correct.
- K. Tacoma: *What's the average price paid per lamp in program?* NEEA: Varies month-to-month based on volumes if bonuses are hit, but we try to keep it under \$1/lamp. Data on pricing isn't strong. We also know price isn't the driver. *Do the customers see any of this, or is it all at distributor level?* NEEA: Grainger is the only one where the customers sees our incentive because they require that it is treated as a mid-stream buy-down.
 - 1) **ACTION ITEM: NEEA to get pricing data to Peter at Tacoma**
- L. BPA: The end user is benefiting from a reduced cost, regardless.
- M. Snohomish PUD: *So how much did NEEA spend on these replacement programs?* NEEA: Don't have that off-hand, need to pull that out.
- N. BPA: Recently looked at low-wattage lamps going through our program and today, it's almost non-existent, now it's almost entirely TLED. I appreciate that this program is still sweeping up low-wattage lamps, even when ours is not.

Emerging Technology Update

The desired outcome is for CAC to gain awareness of current activities and issues in the region. Rob Curry presented on Window Attachments Surface Applied Films.

Presentation Highlights:

- A. Thermoplastic polymer – designed to reduce the amount of solar heat transmitted through the glass. “Microreplication” technology will take light through the window and reflect it throughout the room, without the heat. This reduces total building energy use 5-10%. “Thermochromatic” technology will auto-adjust shading based on amount of sunlight coming through.
 - 1) Interlogic will be at EFX demonstrating this technology
 - 2) This is a lot cheaper than window attachments
- B. Improved insulating value:

- 1) Some films improve single pane clear glass to meet dual pane low-e specifications without a mirror finish
 - Highly reflective over the invisible infrared portion of the solar spectrum while being only slightly reflective.
- 2) 15 year to Lifetime Warranties being offered by film manufacturers; they are not only covering the film in this guarantee, they are offering to cover the entire window system, including the seals (Eastman offering 15 years, 3M offering lifetime warranty).

Discussion:

- A. BPA: *What's the MT play? Are we going to see separate paths on these?* NEEA (Rob): Depends, specific to situations and offer choices— i.e. Class A or B buildings. Mark clarified that we see this as a suite of window attachments. We don't know exactly how this will play out, it's an opportunity for utilities to try programs out and drive demand in one direction or another. Right now we're hyper-focused on seeing that there's a national approach to the rating. These are not performance ratings. It's up to utilities to come up with a qualified list, or CEE to develop a list of tiers.
- B. Tacoma: *What's the cost/SQFT?* NEEA: Around \$15; secondary glazing runs around \$35.
- C. SnoPUD: *What's the payback?* NEEA: Market literature indicates 3 years.

Mark Rehley (NEEA) presented on other technologies:

- A. IOTAS:
 - 1) A firm focused on multifamily, "smart rentals." Personalized automation and controls accessible on mobile devices.
 - 2) Profile travels with renter/user as they move to new home/location, but renters don't pay anything, building owners do. Building management system designed to give building owners more visibility into energy use in individual units.
 - 3) Only costs \$600 to fit building with technology.
- B. Conservent
 - 1) Counter-flow heat-exchanger approach to dehumidification.
 - 2) Utilizes existing HVAC system, seek to resolve mold issues in buildings that use a lot of AC.
 - 3) Save some energy on the re-heating of the air.
- C. Enlighted AIRE
 - 1) Lighted Luminaire control company.
 - 2) Added software layer to individualize temperature controls through "occupancy sensing". Savings from this has potential to dwarf the lighting savings.
 - 3) Also have space sensing to identify traffic "hot spots" and where people concentrate.
- D. Chilldyne
 - 1) Cooling system design for data centers; basically a heat-sink that sits on the processor. Expecting air cooling will no longer be sufficient as technology concentrates.
 - 2) The energy savings associated with using liquid cooling is estimated to be 1/5 of air use.

Wrap up/Feedback on Meeting

- A. Lunch: a couple folks really liked it, a couple said sandwiches from last time were better.
- B. No other comments.
- C. Next meeting: SeaTac on August 2, 2017