

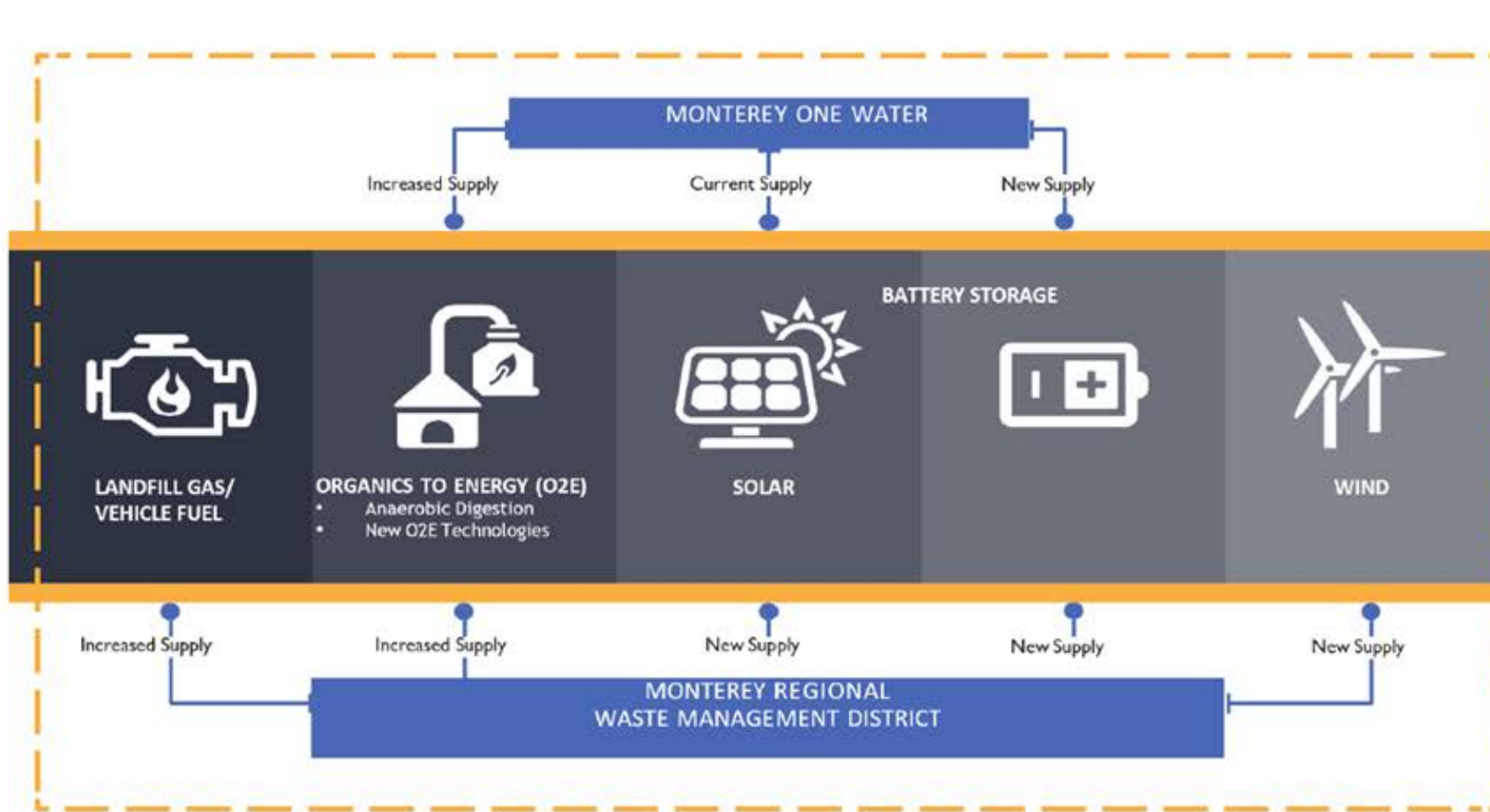


JOINT FEASIBILITY STUDY STUDY UPDATE

M1W & MRWMD

February 1, 2023

Monterey Microgrid Project Vision



- » Islanding capabilities to minimize power interruptions
- » Sustainable power source
- » Potential utility-size microgrid providing power to future desalination plant and other large energy users
- » Current and projected LFG generation and collection + Potential GCCS improvements
- » Digester rehabilitation for co-digestion
- » PFAS destruction
- » Site constraints (footprint, etc.)
- » Various project delivery options: P3, etc.
- » SB1383 Organics Diversion Targets
- » LCFS & RIN credits for LFG to vehicle fuel
- » Minimize financial impact to rate payers
- » Grant funding

Grants and Funding Assistance Programs

- US EPA Grant submitted by M1W – Awarded early 2022
 - Subject is Organics To Energy Diversion - ~ \$169k
 - Will be applied to Joint Feasibility Study work
- Renewed DOE Waste to Energy Local Assistance Program for 2022 –
 - National Renewable Energy Laboratory NREL
 - Received 40 hours of Tech review/consultation services
- ***Under Investigation*** – PG&E Community Microgrid Program
 - Initial Customer Intake Form submitted July 2022
 - Joint Feasibility Study consultant and joint staff to meet with PG&E in February 2023

Related Activities, Areas of Interest, and Projects

M1W

- CalRecycle (Cycle 1) Co-Digestion Grant submitted by M1W (grant project)
 - “Wet” Co-Digestion Process – Awarded NOV 2022
 - Total Project cost estimated at \$6.1MM
 - Grant Funds ~ \$4.2MM
 - Scope of grant covers only food waste injection skid and digester mixers at M1W. Purpose to handle ‘high solid liquid organic wastes’

ReGen Monterey

- *Pending* - CalRecycle Grant for Organic Pre-Processing Facilities – *Anticipated in Q2 Y2023*
 - Pre-processing of Food Waste &/or “MSW Fines” gathered from processing MSW in a MRF
 - De-Bagging, Screening, Blending, & Processing of materials to create an organic slurry
 - Will be applied to Joint Feasibility Study work
- *Pending* – Biochar Technology Pilot Study – *Anticipated in Q2 Y2023*
 - Sitos Group investigative study for limited term (Study ends 6/24 or 6/25)
 - Single unit Pyrollis process to investigate conversion of wood waste, wood chips (aka “compost overs”), and possibly WWTP Biosolids
 - Board approved General Terms at JAN 2023 Board Meeting
 - Contract Agreement under development
- *WMD to AWPf Medium Voltage Project* – In-Progress (project)
 - Will connect ReGen Renewable Energy to M1W AWPf (one of three PG&E Service ‘drops’)
 - Construction Contract awarded to Anderson Pacific
 - Designed by Kennedy Jenks. Permitting with PG&E and MoCo Bldg Dept
 - Board approved Design Modifications for Microgrid Functionality (In-progress)
 - Kupper Engineering retained to design ReGen SCADA & Control systems to be compatible with existing M1W SCADA system
 - M1W and Feasibility Study Consultant (GHD) are part of the Review Team with ReGen

Questions and Comments

Thank-you!



MONTEREY MICROGRID AND RENEWABLE ENERGY PROJECT

M1W
REGEN

February 9, 2023 Ad Hoc Committee

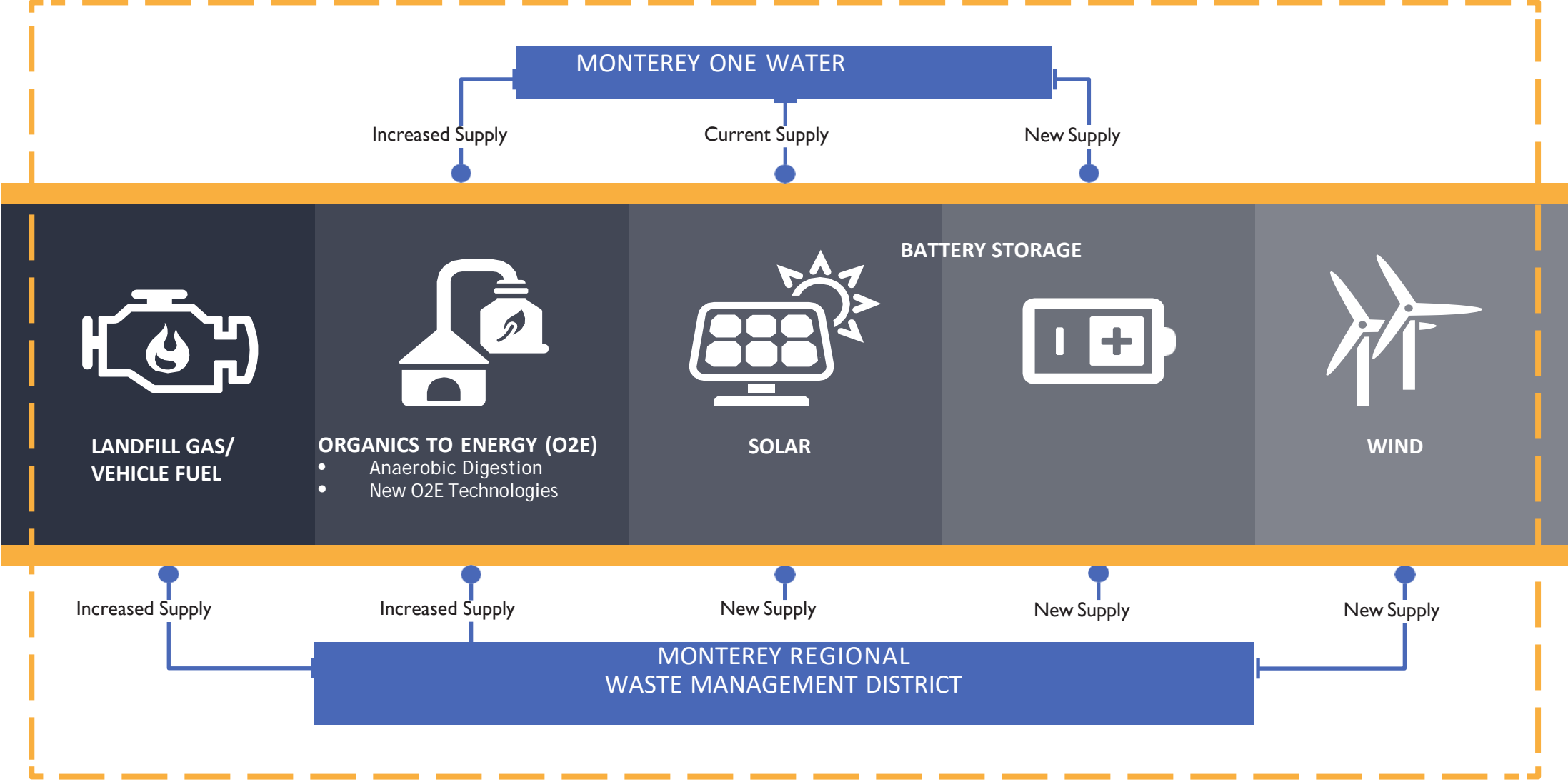
Purpose of the February 9, 2023 Ad Hoc Microgrid Committee Meeting

- 1) **Project accomplishments since the Jan 12 Ad Hoc Committee Meeting (Derek Wurst, Black and Veatch)**
- 2) **Status report on the GHD work to generate a business case associated with food waste for ReGen (Gary Darling, Interim Director)**
- 3) **3rd party professional opinion on moving forward with the Co-Digestion project that CalRecycle awarded a grant for versus waiting for the GHD Feasibility Study results (Craig Lichty, Black and Veatch)**
- 4) **Pros and Cons of ReGen agreeing to move forward with developing a food waste feedstock agreement for the food waste currently being collected for the CalRecycle Co-Digestion Project (Gary Darling, Interim Director)**
- 5) **Discussion by Ad Hoc Committee on whether to acknowledge that the Co-Digestion Project is a project that should be developed with the support of both partner agencies (Melchor/Sciuto)**
- 6) **Scheduling future Ad Hoc Committee meetings**

Ad Hoc Board Subcommittee for the Monterey Microgrid Project

- **M1W Board:**
 - Scott Donaldson (Del Rey Oaks City Council)
 - Ron Stefani (Castroville Community Services District)
- **MRWMD Board:**
 - Jerry Blackwelder (Sand City)
 - Wendy Root Askew (Monterey County Supervisor)
 - Jason Campbell (Seaside)

Monterey Microgrid Project



Agenda Item 1: Accomplishments since the Jan 12 Ad Hoc Committee meeting



Accomplishments

Jan 20 – Kicked off O2E Study

Jan 24-25 – Performed detailed site visits with microgrid team to review M1W/ReGen electrical equipment capabilities and needs for future microgrid

Jan 27 – Established a project SharePoint site for document management/collaboration for the project team

Feb 3 – Held a conference call with PG&E Grid Innovation Engineer on the Community Microgrid Enablement Program

Feb 8-9 – Focused workshops to define the microgrid needs and objectives

Upcoming Milestones

O2E Study

Food Waste Characterization
TM1 & TM2

Infrastructure, Operations &
Process Assessment - *TM3*

Dedicated vs. Co-Digestion
TM5

Microgrid

Strategic Option Selection

Base-Case Microgrid

Agenda Item 2: Status of Business Case associated with Food Waste

(Gary Darling, Interim Director)

- **Proposed Scope (to be approved by ReGen)**
 - Task 1: Clarify if Current food waste delivered to ReGen is directed to the M1W co-digestion instead of compost, does it still count for diversion?
 - Review the CalRecycle Grant requirements and confer with ReGen as to the source of the feedstock materials that are being considered for co-digestion at the M1W facilities. If there are ambiguities as to the interpretation of the source of materials, or the grant, GHD team will engage appropriate entities to evaluate and resolve these issues.
 - Findings and recommendations will be reported in a technical memorandum.
 - Target delivery of work is 3-5 weeks from NTP

Agenda Item 2: Status of Business Case associated with Food Waste

(Gary Darling, Interim Director)

- **Proposed Scope (Continued)**
 - Task 2: Analyze use of food waste for ReGen (TM2):
 - Confirm the quantities and character of the likely range of organic materials within Regen's collection system.
 - Prepare an estimate of the capacity range (i.e., sizing analysis) for the contemplated Compost/Anaerobic Digestion (AD; dry; plug flow) facility(ies).
 - Planning level cost estimate; compile the system costs (e.g., amortized capital, operational, fuel/utilities) as offset by revenues (e.g., byproduct sales, power offtake sales) for each Compost/AD system in an economic analysis.
 - Report findings and recommendation in a technical memoranda.
 - Target delivery of work is 8-10 weeks from NTP

Agenda Item 2: Status of Business Case associated with Food Waste

(Gary Darling, Interim Director)

- Proposed Scope (Continued)
- Work to be performed by Tim Raibley of HDR in collaboration with GHD team; Tim brings 40+ yrs experience in solid waste industry and long-term relationship with ReGen.

Agenda Item 3:
3rd Party
Professional
Opinion on
Moving the Co-
Digestion
Project Forward
Before the
Completion of
the Feasibility
Study

(Craig Lichty, Black and Veatch)

Co-Digestion Discussion Topics:

- A. Status of co-digestion in the marketplace**
- B. Does co-digestion make sense at M1W ?**
- C. Are there major risks in making this decision before study completion?**

Agenda Item 3: 3rd Party Professional Opinion on Moving the Co- Digestion Project Forward Before the Completion of the Feasibility Study

(Craig Lichty, Black and Veatch)

Co-Digestion is Proven in the Marketplace Since 1980's

- Globally Implemented – Austria, Denmark, Germany, Switzerland, UK, Hong Kong
- USEPA (2018) – 1200 WWRFs have anaerobic digestion, 20% co-digest, of these 78 co-digest with food waste
- Major U.S. Locations co-digesting food waste – NYC, Boston, New Jersey, Los Angeles
- Many CA Agencies Operating/Implementing Co-Digestion – why?
 - CA State Implementation Plan for GHG reductions relies on WWTPs using co-digestion
 - SB 1383 mandates organics diversions from landfills
 - SWRCB Study – 6M tons/yr. organics could be digested at existing CA WWTPs
 - WWTPs benefits – renewable energy, reduced energy costs, tipping fee revenues
 - Grant Funding and Tax Incentives make projects very affordable to rate payers

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(Craig Lichty, Black and Veatch)

Many California Agencies are Using or Implementing Co-Digestion w/Food Waste

East Bay Municipal Utility District (>10 yrs)

City of South San Francisco , San Bruno

Central Marin Sanitation Agency: FOG, commercial organics (>5yrs)

Silicon Valley Clean Water (>5yrs)

Delta Diablo (in the planning phase)

Orange County Sanitation District

LACSD – Joint WPCP in Carson (>5yrs)

East Valley Water District - Sterling Natural Resources Center

Victor Valley Wastewater Reclamation Authority (>5 yrs)

City of Manteca

City of Fresno RDRF (>5yrs)

All of these WWTPs also receive FOG/other high strength liquid waste

All but one WWTP (EBMUD) have food waste pre-treated offsite

Agenda Item 3:
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(Craig Lichty, Black and Veatch)

Does co-digestion at M1W make sense? – Yes

- Alignment with CA policies and sustainable management strategies
- Ideal proximity of landfill and wastewater treatment facilities
- Benefits common rate payers of both ReGen and M1W
- Uses existing M1W Assets – digesters, solids dewatering, co-gen Facilities
- Generates additional biogas for existing M1W co-gen reducing purchased power costs from PG&E and improving energy resilience
- Operationally flexible – sewage sludge/food waste can blend in varying combinations, and can be used with FOG/high-strength liquid waste
- Immediately available grant funding and tax credit opportunity
- Tremendous ratepayer value
- Enhances quality of compost benefiting Keith Day Composting Operator

Agenda Item 3: 3rd Party Professional Opinion on Moving the Co- Digestion Project Forward Before the Completion of the Feasibility Study

(Craig Lichty, Black and Veatch)

Are there major risks in making this decision before Feasibility Study Completion? No

- Study will show co-digestion of food waste is a better option than mono digestion
 - Co-digestion exhibits better process efficiency than mono-digestion (Bioresource Technology V265, Oct 2018)
 - Complimentary benefits include; enhances nutrient balance, better substrate variability, robust microbiomes
 - Using Mono-digestion approach at M1W would complicate solids dewatering as solids from mono-digestion of food waste is different than sewage sludge
 - No other CA utility we are aware of has made a decision to mono digest food waste if existing anaerobic digesters are available for co-digestion
- Limited study budget can be better focused around co-digestion approach/equipment selection
- Study will still evaluate organic markets for future sources
- Best and highest use of additional biogas generated from co-digestion can still be evaluated during the study
- **Biggest risk appears to be the loss of significant grant funding from CalRecycle and federal tax credits that could pay for the majority of the project**

Agenda Item 4: Pros and Cons Associated with Moving Forward with a Feedstock Agreement for Food Waste

(Gary Darling, Interim Director)

PROS

- Demonstrates partnership support between the 2 agencies that is consistent with the ReGen letter of support provided in the CalRecycle grant application in June 2021, and the intent of the Microgrid Project development
- Allows M1W to move forward with accepting the \$4.2M CalRecycle grant as well as securing the Investment Tax credits that results in a significantly reduced local cost share

CONS

- Could create the impression that all food waste (residential, commercial and industrial) will be directed to co-digestion at M1W before the completion of the Feasibility Study
 - To eliminate this impression limit the Feedstock Agreement to the current food waste (8,000 – 10,000 tpy) received by ReGen for the duration of the grant requirements (5 years) and a commitment to study other food waste feedstocks as a part of the Feasibility Study

Agenda Item 5: Ad Hoc Committee Discussion (Melchor/Sciuto)

Discussion by Ad Hoc Committee:

- 1) to acknowledge that the Co-Digestion Project is a project that should be developed with the support of both partner agencies prior to the completion of the Feasibility Study and
- 2) direct staff to generate a food waste Feedstock Agreement. Limit to:
 - 1) Existing food waste received by ReGen (8,000 to 10,000 tpy) for 5 years
 - 2) Work together to identify additional sources

Agenda Item 5: Scheduling Upcoming Ad Hoc Meetings

Proposed Monthly Ad Hoc Committee meetings

- Establish a monthly meeting that gets on everyone's calendars
 - Can cancel if there is not enough material for a meeting
 - Meetings to be held in person with a Hybrid Option

Questions and Comments

Thank-you!