



UM 2005 Technical Work Group Follow up on Inaugural Meeting

April 28, 2021

Stakeholders met on April 21, 2021, for the inaugural meeting of the Distribution System Planning Technical Work Group.

This packet of follow up materials includes the following:

- Future meeting dates for the Technical Work Group
- Notes from the April 21, 2021 meeting
- Updated Technical Work Group Plan
- PGE's HCA Team presentation slides (updated from those circulated on 4/14/21)

Future Meeting Dates for the Technical Work Group

For the time being, Staff proposes a monthly cadence for future meetings and asks participants to reserve the following dates and times:

- Wednesday, May 26, 2021 from 9:00 am – 12:00 pm Pacific
- Wednesday, June 30, 2021 from 9:00 am – 12:00 pm Pacific
- Wednesday, July 28, 2021 from 9:00 am – 12:00 pm Pacific
- Wednesday, August 25, 2021 from 9:00 am – 12:00 pm Pacific

Staff proposes the group consider in July potential meeting time(s) and cadence for autumn 2021.

Questions or Feedback

Questions and comments can be directed to Nick Sayen via email at nick.sayen@puc.oregon.gov or by telephone at 503-510-4355.



UM 2005 Technical Work Group

April 21, 2021 Notes and Questions

Below are notes from the April 21, 2021 Technical Work Group meeting, as well as revisions to questions discussed during the meeting. (Revisions were made with track changes).

Attendees:

- PUC Staff:
 - Nick Sayen
 - Kacia Brockman
- CEP
 - Charity Fain
 - Alma Pinto
- OSSIA
 - Ed Smeloff (Vote Solar)
 - Angela Crowley-Koch
- Energy Trust
 - Jeni Hall
 - Ben Cartright
 - Peter Schaffer
- Idaho Power
 - Kelley Noe
 - Jim Burdick
 - Alison Williams
 - Tim Tatum
 - Chris Cockrell
 - Mark Patterson
- PacifiCorp
 - Erik Anderson
 - Matt McVee
 - Wyatt Pierce
 - Teri Ikeda
 - Adam Lint
 - Jonathan Connelly
- PGE
 - Angela Long
 - Nihit Shah
 - Stefan Brown
 - Jason Salmi-Klotz
 - Derrick Harris
 - Joe Boyles
 - Andy Eiden
 - Bachir Salpagarov
 - Tony Grentz
 - Joe Boyles
 - Misty Gao
- NWECC:
 - Heather Moline
 - Fred Heutte
- ODOE: Jason Sierman
- CUB: Sudeshna Pal
- NW Natural: Rebecca Brown
- SBUA: Diane Henkels
- Renewable NW: Micha Ramsey
- TeMix: Stephen McDonald

Meeting recording

Following introductions Staff noted a request to record the meeting, then asked participants for reactions or objections. No objections were voiced, and the meeting was subsequently recorded.

The recording can be viewed at the following link:

<https://opuc-state-or-us.zoom.us/rec/share/zzQZSOg1hp5c1ct2fal5Vlpi5OBbufIQAS8nxJairmEpOMGGfogr-Oj3LeM8PReG.gmJDbWoB3ZhkLpGn>

Passcode: 2GF1?^3.yX

Discussion of Work Group Plan

Staff presented the major aspects of the Plan and noted it is in development. Participants have the opportunity to help shape this effort. The need for additional meetings will be assessed as we go. The Technical Work Group is intended to address technical questions, providing education and background is not a primary goal. Meeting announcements and follow up materials will be posted to the UM 2005 docket.

Initial feedback affirmed there is value in having this forum for technical conversations across utilities. Participants requested having information emailed in addition to being posted to the docket. Staff was asked about the preparation of meeting materials for today's meeting and explained utilities had questions as they began working on their filings which allowed Staff to draft answers in advance. Going forward, new questions may be answered in the TWG meeting. Participants noted it would be helpful to have the questions posted in advance of the meeting, and Staff confirmed the goal of posting questions 1 week in advance.

In response to this feedback Staff updated the Plan (attached) resulting in a revised Plan to be used as a Working Draft - that is a work-in-progress, which may be revisited if needed.

Questions Discussed during the April 21, 2021 Technical Work Group meeting

Please note that new content, and revised content, has been added in this section using track changes to distinguish between content circulated *ahead* of the April 21 meeting, and follow up *from* the April 21 meeting.

General Questions

1. Task 4.3.a.i (Community Engagement Plan, During Plan Development) references “b”. Can staff confirm if this a typo for “ii” or if a requirement was accidentally deleted?

Response: The “b” should indeed be “ii”.

2. The DSP Guidelines (Guidelines) mention "Staff anticipates requesting that Order Nos. 12-158 and 17-290, issued in Docket No. UM 1460, be revised or these orders may be superseded by new requirements adopted in this docket." What is staff's expectation for the future of the Smart grid report requirement?

Response: Assuming that the DSP plans address Commission and stakeholder goals, specifically “focused and strategic reporting on distribution planning,” Staff would recommend discontinuation of the Smart Grid Report, subject to review of non-DSP topics, and resolution of reporting on these topics.

Discussion in meeting: Eliminating redundancy is good, but suspending the Smart Grid report may result in losing visibility into important topics, like transmission, that are not addressed in DSP. Stakeholders should provide input on the topics to be retained when the Commission decides how utilities will continue to report on those topics. Perhaps the Smart Grid report should be retained, but with reduced scope.

Staff response: The Smart Grid report is on a one-cycle suspension (not canceled). After DSP Part 2 filings in 2022, there will be a process to review the Guidelines. As part of that process there will be opportunity to consider the Smart Grid Report, and comment on elements of it that were not incorporated into DSP, and the best place to report those going forward. **The draft response has been revised.**

3. Regarding requirements 4.1.f and 4.1.g, what does "at time of filing" mean?

Response: For initial plans “at the time of filing” may mean the most recent calendar year where complete data is available. A utility may elect to use more recent dataset(s) if it chooses to do so, ~~or the most recent regulatory filing applicable to the data in question (for example the annual net metering report), whichever is more current.~~

Discussion in meeting: Submitting Plans with data based on the calendar year cycle, rather than acquiring new data just before a reporting deadline, has several advantages. It would allow comparison of plans by calendar year on a consistent basis with all datasets representing the same time period (since not all data is available monthly). It would also allow time for internal review and QC before filing, as well as time for stakeholder review, which can't happen if the data is pulled at the last minute. At the same time data used for Plans should be the most up-to-date data, within reason, and so there may be tension between being most up-to-date and the calendar year cycle.

Staff response: DSP is not on a fixed calendar schedule, but a cycle based on date of Commission action on previous plan, with a goal to keep DSP synched with IRP filings. A calendar year cycle for the data included in Plan updates seems reasonable for the first filings. Further synchronization, and possibly consolidation, of data reporting needs further consideration during the review of the Guidelines. **The draft response has been revised.**

Hosting Capacity Analysis (HCA) Questions

4. Regarding requirement 4.2.a – does “...difficult to connect DERs...” refer to all DERs, such as demand response, or is this limited to customer-sited generation, such as NEM, QFs and Community Solar?

Response: “DERs” refers to customer-sited generation, such as NEM, QFs and Community Solar. EVs could become energy-producing DERs at some point in the future.

Discussion in meeting: Use of DER in this instance is confusing; “customer-sited generation” could be used in the future instead of “DER” when non-generating DERs such as demand response and storage are excluded from the definition. DER is understood to encompass a broader array of resources, and is defined as such for use elsewhere in the Guidelines.

Staff response: Clarification of terminology should be considered during the review of the Guidelines.

5. What does “circuit” mean?

Response: “The use of this terminology is to distinguish between all the parts below a substation, and the subsequent segmentation of those parts.

“Circuit” is intended to mean all parts; the main, three-phase circuit, right out of the substation (maybe also called main or mainline).

“Feeder” is intended to mean the circuits branching off the mainline (maybe also called laterals).

“Line segment” is intended to further specify individual portions of circuits or feeders.

Discussion in meeting: Terminology used by utility staff does not exactly match the terminology as applied in the Guidelines. For example: utilities use “feeder” and “circuit” interchangeably, “mainline” refers to a zone of protection, and “lateral” is part of a feeder. Staff explained the intention of the increasing granularity, and the associated Guidelines’ terminology.

6. HCA Options 1-3 articulate increasing levels of granularity. Can you describe the value that is gained by the increasing granularity?

Response: The purpose of increasing granularity is to assess locations with greater specificity, and to utilize data for increasingly recent conditions.

7. Can a utility propose additional options for HCA beyond the three described in the Guidelines?

Response: Yes. If a different HCA approach warrants discussion and consideration it can be included. The utility should explain, and provide justification for the different approach.

8. Can you explain the purpose of including “...costs of upgrades assigned to planned generation...” in the HCA dataset or map? This information may be confidential.

Response: Including the “...costs of upgrades assigned to planned generation...” communicates the cost(s) required to interconnect by using the estimated interconnection costs for a new generator included in the utility’s engineering studies, currently made public in OASIS. A utility is not expected to share the actual amount that ~~each~~ a specific interconnecting customer is paying to interconnect.

Discussion in meeting: Utilities asked for clarification about whether they are expected to perform engineering studies for hypothetical new generation as part of the HCA, or just for actual project application, noting that past upgrade costs are not relevant to current HCA.

Stakeholders discussed what triggers an interconnection study. Generators of any size can trigger studies, depending on condition of the feeder. EVs do not require interconnection studies, but utilities do try to account for EV load additions.

HCA can become stale quickly when uptake of EVs, and other additions that don’t trigger interconnection studies, accelerate.

Assessing all the separate upgrades paid for by generators would be useful. Disparate generator-paid upgrades could result in overbuilding the distribution system.

Staff response: The Guidelines’ HCA options require reporting of costs of upgrades assigned to planned/queued generation. This is limited to generators in the interconnection queue. This will show costs that have been assigned for interconnection upgrades, but have not been completed. The draft response has been revised.

9. Do you expect that every location of the service territory should have HCA performed?

Response: Yes. However, if a different HCA approach – in this case one that does not evaluate the whole system – warrants discussion and consideration, a utility can

propose it. The utility would have to provide the justification for why that makes sense.

Long Term Plan Questions

10. Can staff provide additional context and detail on the requirements 4.4.b.i.2 and 4.4.b.i.3:

i. *“Assessment of investment options to enhance the grid across the following range of areas, including relative costs and benefits:*

.....

2) *Distributed resource and renewable resource enhancements*

a) *Penetration and activation/utilization of smart inverters*

3) *Transportation Electrification enhancements”*

Response: The requirement states that one part of the utility’s long-term DSP vision should include assessment of potential investment options to enhance the grid, and these options should include potential investments to enhance for DERs, as well as investments to enhance for transportation electrification. The assessment should include relative costs and benefits.

Discussion in meeting: Staff noted this question addresses content from the Smart Grid Report that was rolled into the Guidelines. This question, and Staff’s draft response, will be discussed further as time ran short this meeting.

Part 2 Questions

11. Per requirement 4.5.a:

“How legacy distribution planning practices will be transitioned to the requirements of Part 2”

Can staff confirm the specific aspects of planning practices they are referencing in Part 2? For example, are DER forecasting, and non-wire alternatives analysis the two aspects of planning that are required for Part 2?

Response: “Legacy distribution planning practices” is a general reference to the activities which comprise utility distribution planning prior to Order No. 20-485 (referred to here as “status quo activities”).

Part 2 articulates a process with four major components in a linear fashion (Forecasting of Load Growth, DER Adoption, and EV Adoption; Grid Needs Identification; Solution Identification; Near-Term Action Plan), however status quo activities as implemented day-to-day may not line up with the four components of Part 2. Requirement 4.5 states utilities should plan for how day-to-day implementation of status quo activities transitions to day-to-day implementation of the four components of Part 2.

Discussion in meeting: Staff noted that requirement 4.5 is for a high-level summary, and that this question, and Staff's draft response, will be discussed further as time ran short this meeting.

PGE's HCA Team discussion

The meeting agenda included slides PGE presented previously in its March and April Partner meetings. However, PGE presented new slides in this meeting on the Company's HCA approach, goals, and timeline, culminating in the HCA filing in October.

PGE asked for volunteers (currently limited to the TWG) to provide feedback on enhancements being made to the generation-limited feeder map used for net-metering. Please sign up by Thursday, April 22 by emailing your name and organization to DSP@pgn.com. PGE will email volunteers a link to the map, a user guide, and a spreadsheet for providing feedback.

PGE seeks immediate feedback on layers added to the map, including daytime minimum load, substations, public safety power shutoffs, and queued generation capacity. PGE notes that it's not a hosting capacity map. It's a screening tool to help generators identify feeder readiness for new generation.

PGE will request feedback in 2-3 separate 3-week "sprints" in which users provide feedback in week 1, PGE designs enhancements in week 2, and updates the map in week 3, to begin the next round of feedback. PGE wants to know how useful the information is, what additional information would make it more useful, and how often it should be updated. PGE also seeks feedback on the User Guide, particularly the introduction and who the map can help.

Information published in OASIS is the basis for the map. The data is updated twice per year. Generation-limited feeders are defined as having generation in queue that exceeds 90% of Minimum Daytime Load (MDL). MDL is the load remaining on the feeder after existing generating capacity is considered.



UM 2005 Technical Work Group Plan

Working Draft, April 28, 2021

Background

Based on feedback from UM 2005 discussions in 2020, as well as the draft DSP Guidelines (Guidelines) public comment period, Staff understands there is need for, and value in, a Technical Work Group to surface and, when possible, address technical questions that arise in the course of the utilities working on their plans.

Staff proposed the following Plan at the April 21, 2021 inaugural meeting of the Technical Work Group and requested stakeholder feedback. Staff received feedback on emailing materials in addition to posting materials to the docket, and also received a question about recording meetings. In response to this feedback Staff has revised the Plan (with alterations noted via track changes). Staff proposes the revised Plan as a Working Draft - that is a work-in-progress which may be revisited if needed - dated April 28, 2021:

Purpose statement

The purpose of the Technical Work Group is to serve as a forum to identify, articulate, discuss, and when possible, resolve technical questions that arise in the course of the utilities preparing their plans.

The primary goal in addressing technical questions is to try to answer questions, solve problems, and find solutions to barriers that would otherwise inhibit completion of the utility plans.

This is distinct from other docket activities in which raising awareness, developing background, or providing education may be primary goals.

While still in development, the Group may engage in activities such as assisting utilities in vetting ideas needing stakeholder feedback, discussing data formats, clarifying terminology, or acting as a general point of discussion amongst utilities, stakeholders, and Staff.

Meeting timeline and deliverables

Technical Work Group meetings will be open to stakeholder participation.

Initially the Group will meet monthly for 3 hours on a monthly basis. Cadence and meeting length will be revised as needed.

Staff will solicit questions and discussion topics approximately two weeks prior to each meeting, and from this develop an agenda.

Meeting agendas and materials will then be circulated one week prior to each meeting to allow participants to prepare in advance with the goal of making each meeting as productive as possible. **As the primary means of communication, meeting agendas and materials will be posted to the UM 2005 docket.** For participants' convenience Staff will develop a list of participants' email addresses, and will also send agendas and materials to these email addresses.

As is practical Staff may draft answers to questions for review during the meeting. Alternatively, questions may be resolved in the meeting. Alternatively~~Finally~~, a question may need more thought and consideration than is possible during the meeting in order to be resolved. **In this case, Staff will strive to provide feedback on the unresolved question as expeditiously as possible after a meeting.** Questions may also go unresolved, either in the meeting or after, and should that be the case it may not be a 'bad outcome'.

Staff will take notes during the meetings. The notes will summarize questions being asked, rationale provided surrounding the question and potential resolution, and any resolution. The notes are intended to serve as a reference, but are not intended to serve as a comprehensive transcript. To preserve a collaborative dynamic that promotes sharing of all ideas and concerns, meetings will not be recorded as a regular practice.

Staff will provide notes as expeditiously as possible after a meeting. As the primary means of communication, meeting notes, and any feedback on unresolved questions, will be posted to the UM 2005 docket. For participants' convenience Staff will also send notes and feedback on unresolved questions to participants' email addresses.

Hosting Capacity Analysis (HCA)

April 21, 2021 | Technical Working Group Meeting



Agenda

Recap the HCA slides presented in prior partner meetings

Discuss feedback opportunity

Provide a brief overview of the process and expectations

Review the map and accompanying user guide

Pause to get feedback from Technical Work Group members

Review feedback instructions and next steps



What Is Hosting Capacity?

The hosting capacity of a distribution feeder is the amount of distributed energy resources (DER) that can be accommodated without adversely impacting power quality or reliability under existing feeder design and control configurations.

Source: [UM 2005 Workshop \(oregon.gov\)](#)

The hosting capacity is an estimate of the amount of DER that may be accommodated without adversely impacting power quality or reliability under current configurations and without requiring infrastructure upgrades.

Source: [Hosting Capacity | Con Edison](#)



Applications of Hosting Capacity Analysis

1

•Enabling DER Development

Enables DER developers to identify locations in a utility's service territory where interconnection costs are likely to be lower and to direct their investments.

2

•Enhancing Interconnection Application Processes

Help the technical screens for net metering application and other interconnection requirements. Help to determine when an application is likely to cause a violation related to voltage, thermal, or protection criteria.

3

•Advancing Distribution Planning Analytics

Enable utilities to identify when hosting capacity will become constrained and evaluate the impact of grid modernization investment, non-wire solutions, long term load and DER forecasting.

Hosting Capacity Analysis Runway



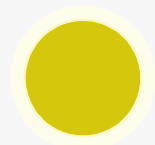
Crawl

- Conduct a system **evaluation to identify areas of limited DER growth**
- Provide a plan to conduct hosting capacity evaluations
 - Plan may address alternate tool options that may **provide more approachable and instructive data for communities**
- **Initial Requirements**
 - Update Net-Metering Map to include Public Safety Power Shutoff
 - Conduct Options Analysis (e.g., cost and timeline of 3 options)



•Walk

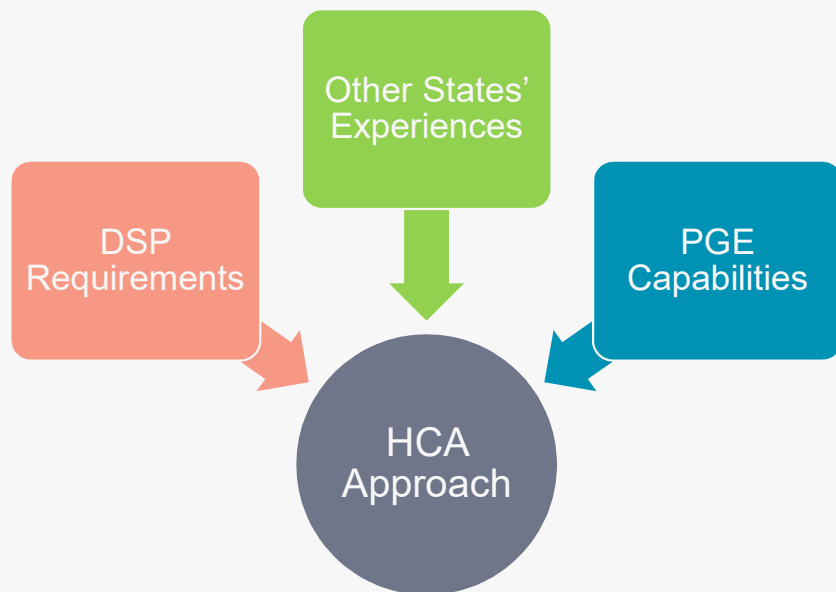
- If determined through Docket **UM 2111**, conduct hosting capacity analysis as an interconnection use case
- Include **distribution-level impacts to the substation and transmission system.**
- Conduct **hosting capacity evaluations**



•Run

- **Comprehensive hosting capacity evaluations**
- **Increased level of detail** regarding distribution constraints, asset performance, and DER performance metrics **Address emerging technology development**

HCA Approach: Goals, Inputs and Considerations



- **Enable Decision Making** – support developer’s siting/investment decisions and accelerate the Distribution Planning screens
- **Focus on DER Readiness** – ability to support DER integration, based on distribution system characteristics
- **Develop the Minimum Viable Product** – begin sharing distribution system characteristics ASAP to collect feedback from stakeholders and shape the conversation about level of HCA required
- **Evolve:** ADMS/DERMS dependency – ability to take advantage of granular (e.g., spatiotemporal) Hosting Capacity information is dependent on PGE’s ability to communicate with and operate DERs

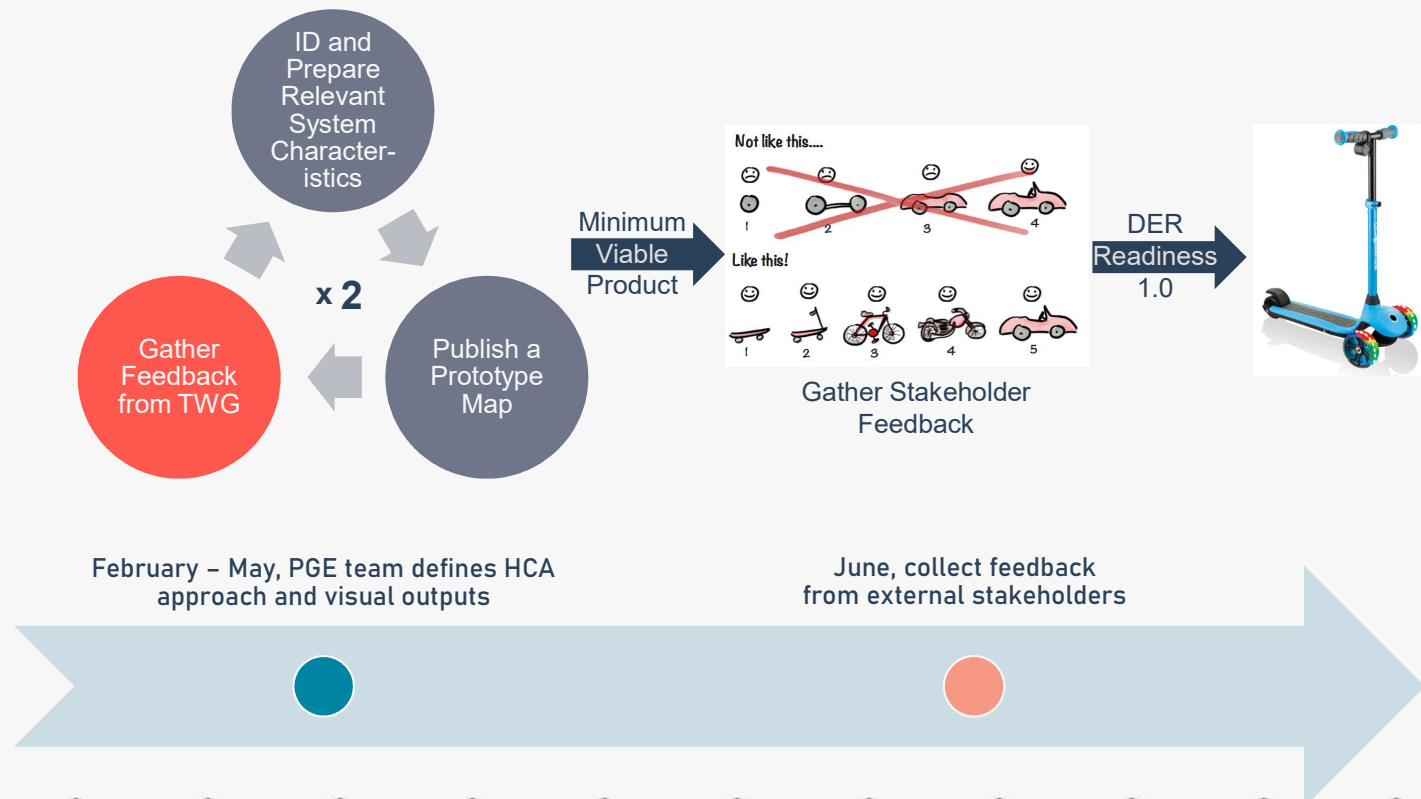
HCA Timeline



HCA Timeline (cont.1)

Crawl

- Conduct a system **evaluation to identify areas of limited DER growth**
- Provide a plan to conduct hosting capacity evaluations
 - Plan may address alternate tool options that may **provide more approachable and instructive data for communities**
- Initial Requirements
 - **Update Net-Metering Map to include Public Safety Power Shutoff**
 - Conduct Options Analysis (e.g., cost and timeline of 3 options)



HCA Timeline (cont.2)

Crawl

– Conduct a system evaluation to identify areas of limited DER growth

– Provide a plan to conduct hosting capacity evaluations

- Plan may address alternate tool options that may provide more approachable and instructive data for communities

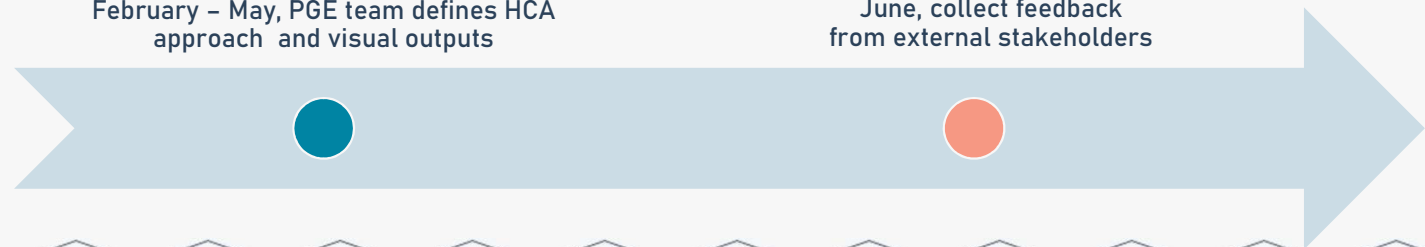
– Initial Requirements

- Update Net-Metering Map to include Public Safety Power Shutoff
- Conduct Options Analysis (e.g., cost and timeline of 3 options)



February – May, PGE team defines HCA approach and visual outputs

June, collect feedback from external stakeholders



Opportunity to Provide Feedback



We Want Your Feedback!

Sprint Format: 2 to 3 three-week Sprints with TWG, then prepare for publication in Q3

Week 1 Feedback

- Send map link and materials to target audience
- Users spend 1 – 3 hrs during the week reviewing the map/materials
- Submit feedback via email or in spreadsheet

Week 2 Design

- HCA team consolidates feedback
- Evaluate feedback
- Conduct design session with PGE GIS team

Week 3 Develop

- GIS team incorporates feedback
- Conduct review meeting with HCA team
- Publish revised map

Sprint 1: 5/3 – 5/21

Sprint 2: 5/24 – 6/11

Sprint 3: 6/14 – 7/2
(if needed)

Review Exhibits and Discuss

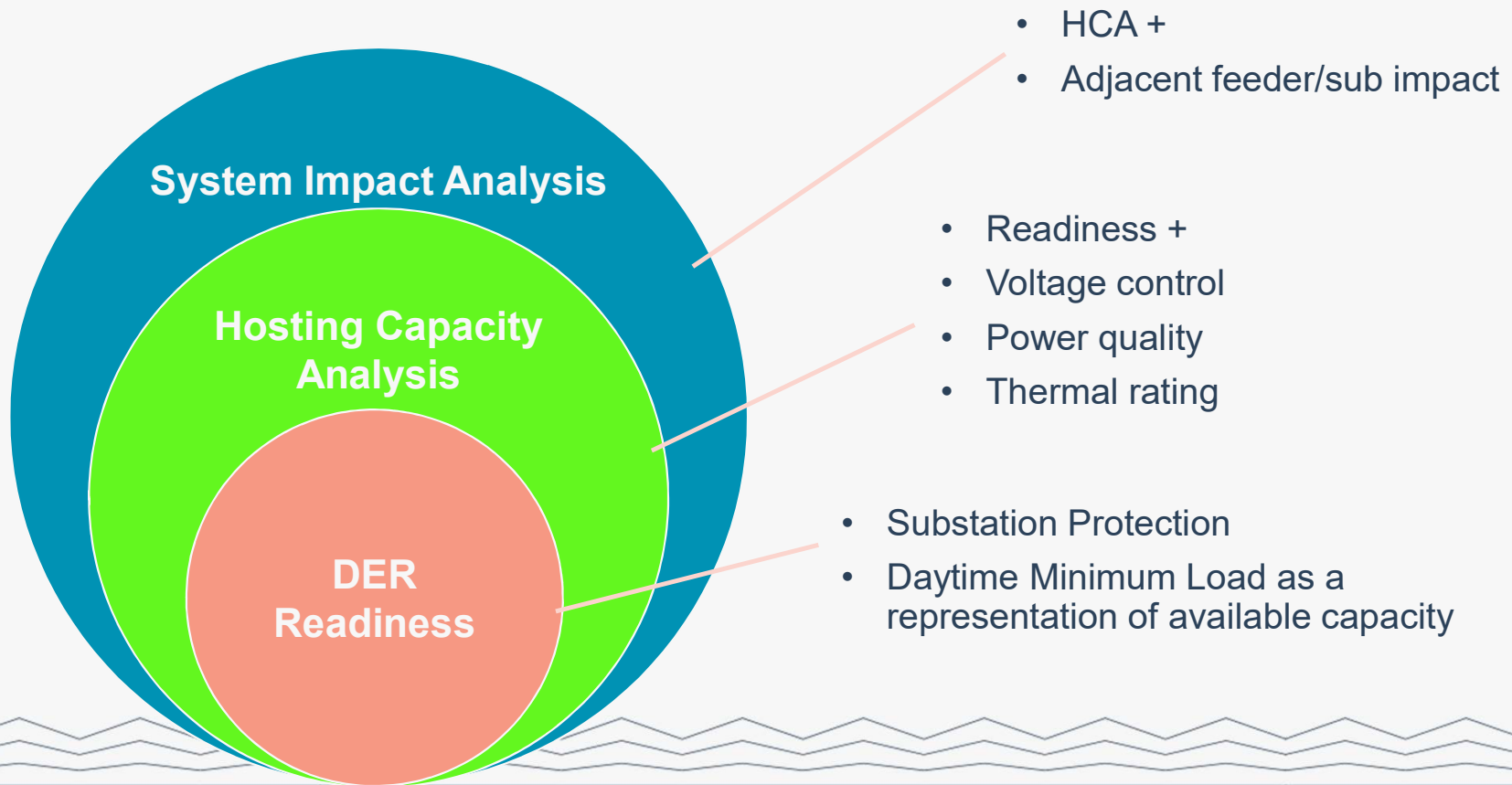
- DER* Readiness Map (screenshot on slide 19 for reference)
- DER Readiness Map User Guide
- Feedback Template

- Q&A with Technical Working Group

*DER refers only to Distributed Generation, primarily solar pv, in this context



Relationship Among Screening Activities



Feedback Process

•How?

- PGE will provide a spreadsheet and email address to submit feedback

When?

- Preferably, stakeholder feedback will be delivered during Week 1, but the PGE team will accept feedback anytime.

What happens with the feedback?

- Feedback that can be addressed will be incorporated into the map and supporting materials.
- Feedback that can not be incorporated will receive an explanation and will be reviewed with stakeholders for prioritization and incorporation into an HCA roadmap.

Next Steps

Thursday, April
22nd

- **Volunteer to provide feedback** – send the following information to DSP@pgn.com:
 - First and Last Name
 - Organization (if possible, let us know if your organization has an ArcGIS Online account)
 - Email address (ArcGIS will send an email invite to this address)

Wednesday,
April 28th

- PGE will send an email to Volunteers that provides the feedback spreadsheet and instructions for accessing the map and user guide

Thursday, April
29th

- Volunteers will receive an email invite from ArcGIS Online to access the map (make sure this email doesn't get lost in a "spam" or "junk" folder)

Monday, May
3rd

- Volunteers begin providing feedback!

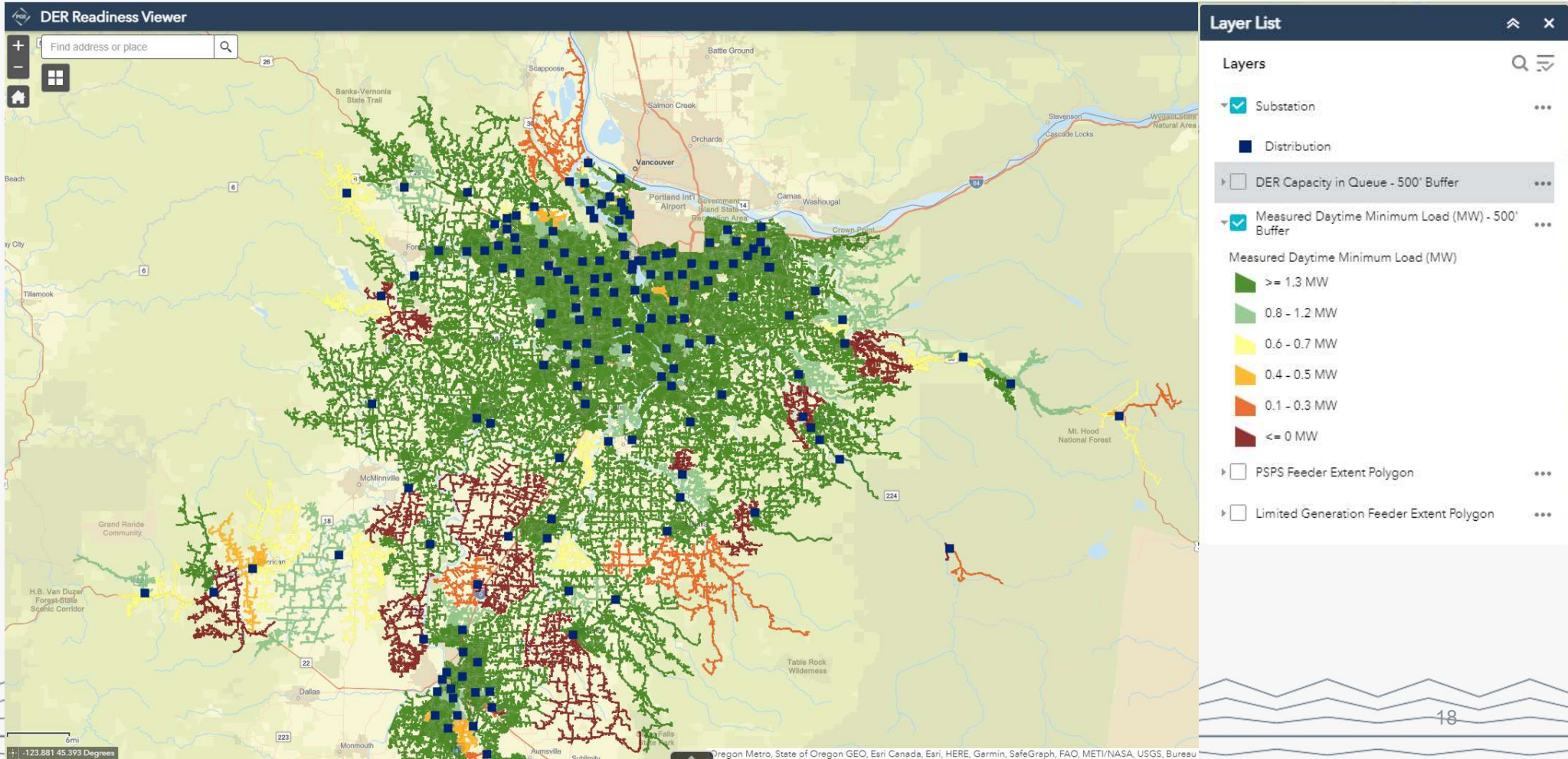
Proposed partner engagement timeline

		2021									
		January	February	March	April	May	June	July	August	September	October
Distribution System Planning (DSP) plan - Part 1	Baseline data and system assessment	Data collection, organization, QA/QC, and visualization				Present to partners for feedback	Iterate as necessary	Final draft shared with partners		PGE review process	Filed on Oct 15th
	Hosting capacity	System evaluation map and hosting capacity option analysis					Present to partners for feedback	Iterate as necessary	Final draft shared with partners	PGE review process	Filed on Oct 15th
	Community engagement plan	Development of the Community Engagement Plan							Present to partners for feedback	PGE review process	Filed on Oct 15th
	Long term planning	Development of long-term plan						Present to partners for feedback	Final draft shared with partners	PGE review process	Filed on Oct 15th

Appendix



DER Readiness Map



Additional HCA Considerations

Category	Impacts	Mitigation
Voltage	Over-voltage	Adjust power factor setting, reconductor
	Voltage Deviation	Adjust power factor setting, reconductor
	Equipment Voltage Deviation	Adjust power factor setting, adjust voltage regulation equipment settings, or reconductor
Loading	Thermal Limits	Reconductor, replace equipment
Protection	Additional Element Fault Current	Adjust relay settings, replace relays, replace protective equipment
	Breaker Relay Reduction of Reach	Adjust relay settings, replace relays, move or replace protective equipment

Abbreviations

DER – Distributed Energy
Resource

GIS – Geographical Information
System

HCA – Hosting Capacity Analysis

