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BEFORE THE

CALIFORNIA ENERGY COMMISSION

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IEPR STAFF WORKSHOP ON

ENVIRONMENTAL INFORMATION FOR ENERGY PLANNING

CALIFORNIA ENERGY COMMISSION

FIRST FLOOR, ART ROSENFELD HEARING ROOM

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

WEDNESDAY, AUGUST 2, 2017

1:00 P.M.

Reported By:

Julie Link

APPEARANCES

CEC Staff Present

Misa Milliron

Scott Flint

Presenters Present

Jim Stritholt, Conservation Biology Institute (WebEx)

Georgeann Smale, Bureau of Land Management (WebEx)

Emily Zvolanek, Argonne National Laboratory (WebEx)

Public Present

Russ Teal (WebEx)

Emily Leslie, Defenders of Wildlife

Kate Kelly, Defenders of Wildlife

Steve Mills (WebEx)

John Zemanek (WebEx)

INDEX

P R O C E E D I N G S

AUGUST 2, 2017 1:00 P.M.

MS. MILLIRON: Let's get started. My name's Misa Milliron. I'm staff at the Energy Commission in the Siting Division. I work in the Transmission Office.

And I want to welcome you to this IEPR Staff Workshop on Environmental Information for Energy Planning.

Just a couple of announcements before we get into the agenda and one is just a safety announcement. And for those of you who are not familiar with the building, the closest restrooms are out diagonally, out of each door of the hearing room.

If there's an emergency and the building is evacuated, follow the staff to the appropriate exits. We'll reconvene at Roosevelt Park, which is diagonally across the street from the building. Proceed calmly and quickly, following employees with whom you're meeting to safety exit the building.

This workshop is being recorded. A copy of the recording will be available on the website a few days after the workshop, and we'll notify you via list serves.

Information on our work on this topic will be sent to those who have joined the dedicated list serves.

And there's a handout on the table, in the foyer, with instructions on how to join this one and find our webpage. That information is also included in one of the PowerPointss that's going to be shown today, for those of you that are on the WebEx.

For those of you in the hearing room, if you wish to make public comments or ask questions during the designated periods, please come forward to the podium adjacent to the tables in the front. Please speak directly into the microphone on the podium so that those on the WebEx will be able to hear what you have to say.

For those participating by WebEx, you will be muted until the designated comment or Q&A periods. We do plan to pause for questions after each presentation. And there's also a public comment period at the end.

We'll call on participants in the room first and then call on WebEx folks. We'll unmute the phone line for each WebEx participant as we call on them. Go ahead and use the raised hand feature in WebEx to notify the host that you'd like to participate. You just click on the hand icon in the participant's panel, and we'll notify you when you're unmuted.

When your question's been addressed, please go ahead and click that hand icon one more time to lower your hand.

You can also submit questions at any time, using the chat feature in WebEx.

For written comments, please see the revised notice, both online and on the table, in the foyer, for instructions. There was a mistake in the initial one that was posted online, with regard to the location to send paper comments, paper or e-mailed comments. So, if you plan to submit that way, please check the notice carefully and make sure you've got the one that's posted up online there, now, or take a handout.

Comments from this workshop are due on October -- I'm sorry, August 16th.

And, finally, we'd appreciate your signing in the sign-in sheets out front, even if you've already signed in with security, or you can leave a business card with me. Thanks so much.

I'm going to go ahead and turn it over to Scott Flint with the Energy Commission.

MR. FLINT: Hi, everyone. I'm Scott Flint. I'm with the California Energy Commission. I'm the Program Manager in the Transmission Office, and I work primarily on energy and transmission planning activities with others, here at the Commission.

I'd like to welcome you to joining us this afternoon for this workshop. I'll just briefly run

through the agenda. We'll have a discussion of the background of this proceeding, which is entitled Environmental Information for Energy Planning. And it's also jointly billed as part of our IEPR, Integrated Energy Policy Report development for 2017. So, this workshop fills both of those bills.

We'll have a presentation on background and a case study that the Energy Commission is proposing to work on related to using environmental information for energy planning.

We'll have a demonstration of the California Environmental and Land Use Report Writer that works in conjunction with Data Basin. And that will be given by Jim Strittholt from the Conservation Biology Institute.

And then we'll have a demonstration of the Section 386 Energy Corridor Mapping Tool, by Georgeann Smale and Scott Whitesides from the Bureau of Land Management, and Katie Szoldatits and Emily Zvolanek from Argonne National Laboratory.

So, that will be our set of presentations for the day. We'll stop after each presentation to entertain questions. And then, at the end we'll have public comment, microphones open for public comment both here, in the hearing room, and on the WebEx. So, that's how we'll go today.

So, let me see, let me just make sure I can work the slides again. Thank you.

So, like it or not, believe it or not we'll all here today because of climate change. And just to prove that fact, it's at least 103 in Sacramento and there's a heat wave all over the Pacific Northwest for this week. So, we set that up just to reinforce the point.

When I say we're here in response to climate change, we're here to do the work of the Energy Commission, in this case energy planning and transmission planning, related to meeting the State's ambitious greenhouse gas goals, which are currently taking us to an RPS of 50 percent by 2030, and a greenhouse reduction goal of 40 percent below 1990 levels by 2030. So, those are fairly new policy goals promulgated by the Legislature and the Governor's Executive Order, and challenging us to meet the 50 percent RPS, which will help us meet those greenhouse gas goal reductions.

A little overview from last year's Integrated Energy Policy Report. California's energy system as a whole, that means fuel development from cradle to grave, and utilization, and generation, and transportation, and all of the elements of the electrical system are 80 percent of the State's greenhouse gas emissions.

For the electrical sector, which primarily deals with generation, that's a different story, greenhouse gas emissions are already 20 percent below 1990 levels. And that's largely attributed to the increase in renewable energy and the decrease in carbon -- in coal-fired generation that's happened primarily in the last ten years. And a lot of that new renewable energy has come online just in the last five or six years, in California.

In the accompanying Environmental Performance Report that was published with the Integrated Energy Policy Report last year, the report indicated that there had been lots of improvements in the system for many environmental metrics, including air quality and water use.

But for the aspect of land use, there's actually been an increase in footprint, disturbance and potential biological impacts related to the deployment of large-scale renewable energy. Solar and wind sites are quite large and take up a lot of space on the landscape.

And this just further reinforces the need for a well-informed and continued long-range planning for both generation and transmission deployment in California to meet those ambitious goals.

The Energy Commission has led and participated

in a variety of energy planning processes since 2005, and they're listed here. And, the first and second Renewable Energy Transmission Initiative Processes, or RETI processes, and the Joint Renewable Energy Action teamwork on the DRECP, the stakeholder-led San Joaquin Valley Identification of Least Conflict Lands Study.

During those processes California agencies, local governments, tribes and stakeholders have gained experience with planning approaches that seek to identify the best areas for renewable energy development and transmission line development. And these continued planning activities have helped the State meet and will help the State meet its renewable energy and climate goals.

Over the years, we've done a lot of work that includes collection of statewide, both regional and statewide datasets, environmental data to support renewable energy development, and even transmission, the analysis of that and potential impacts on the environment and associated conservation and mitigation efforts related to the development of that infrastructure.

These processes have built upon each other to facilitate expansion of data development and the beginnings of development of some web-based tools to

help understand and utilize that information in planning processes as we move from region to region in the State.

In each of these processes the landscape-scale planning takes into consideration a wide range of potential constraints and conflicts, including environmental sensitivity, conservation, and other land uses, tribal and cultural resources, and more when considering future renewable energy development.

The California Energy Commission is continuing to build off this body of work to facilitate environmentally responsible renewable energy and transmission development to help meet the goals of SB 350.

A common theme for all of this work, for most of this work, not all of the efforts but most of them since 2008 have been a collaboration with the Conservation Biology Institute, or CBI, for two things. One is really to help build ecological models, science-based datasets, incorporate conservation planning assessment and expertise, and create customized science interpretation tools and educational support for participating in these -- for enabling folks to participate in these planning processes, including agency staff and stakeholders.

Two primary things that we work on closely with

CBI; science-based data development and then, also, utilize their Data Basin platform, which is a web-based mapping platform that is not just your typical data platform. It's a web-based mapping and analysis tool that enhances knowledge sharing by integrating science, mapping and people.

So, there are a lot of unique features that we've talked about in other processes and folks will see during this process. If you participate closely with us in the development of the pulling together of the datasets that we'll talk about in a bit, and assembly of a decision support tool that we're working on through this process, you'll see the benefits of this system up close and personally.

So, it's a huge collaboration value. The service was already existing, built by CBI independently. And during our work with them on developing the scientific basis for our planning activities, we also took advantage of the unique collaborative functions of the system to be able to communicate with stakeholders and allow stakeholders to play with data, play with maps and be better involved -- comment on data, maps and processes and to be better involved in these processes. And we will continue to do that work and make things available on Data Basin.

So, for each of the efforts that we've talked about earlier, the RETI, the Desert Renewable Energy Conservation Plan, the San Joaquin Valley planning effort, and now work that we're doing on California offshore wind, we have worked with CBI to develop individual gateways on a Data Basin platform. And a gateway is the branding or labeling that's brought to bear on a particular process, project, or geographic area so that data can be assembled that's topical to that planning effort or that area, and the results of that planning process can be shown, and folks can find it easily. And it's an organizational thing that helps organize the data and the results, so people can find it.

Data Basin is a large set of data that folks use internationally and so these gateways help focus folks to participate in these processes.

So, we have one gateway that we developed for each process so far, and these are available here at the URLs that are indicated under each one. This is important because what we're doing in this process now is combining a lot of those datasets that we've developed in these other process and updating them, and bringing them together for use in one statewide planning tool.

So, as we work through this together, and that's the purpose of this process is to vet how we assemble that data and information, and to vet how we put the tool together, and how it reports out the environmental and land use information that we have in there. And then, how we might best use it in planning processes is what we're getting together for, and want your input on as we go along.

So, since we're still building some of those things, one thing that is available right now is a lot of the underlying datasets that we'll be using and talking about. And although they're not assembled in one place, yet, they exist in these other -- they exist on Data Basin and are accessible through these gateways for each of the respective planning processes. So, folks can start evaluating the datasets, right now, that we'll be looking at in this process and be using as data that the Land Use and Environmental Planner tool draws from.

If folks were with us in the Renewable Energy Transmission Initiative 2.0 process, you'll remember that the charge of the Environmental and Land Use Technical Group was to start assembling these datasets and looking at these available datasets to assess their ability to assist us with this high-level look at

planning for generation and transmission in the State.

And as part of that work, with working with CBI, again, put together -- started to put together an Environmental Report Writer that would -- we called it that. It's basically an interface tool that allows people to query the data in a visual manner, in a couple of different ways. And we're going to see a demonstration of that today, when Jim presents that to us in a bit.

But suffice it to say we started that during the RETI environmental process, but we really did focus on building the datasets. And we'll go through the datasets a little bit more, also in this presentation.

But the recommendation of the technical group report, from the RETI 2.0 process, suggested that we continue to develop this data, assemble it in a logical fashion, and work together to complete the Environmental Report Writer tool that we're talking about, that lets people use this dataset to participate in various statewide planning processes for energy and transmission. So, that's the charge of our work on environmental information for energy planning.

When the data is ready and the Environmental Report Writer tool is ready we expect it to be potentially used by industry, project developers, and

utilities for landscape-level, high-level site assessment. Used by stakeholders to evaluate potential suggestions or inputs in the various planning processes for energy generation and transmission planning. And to be used by agencies engaged in planning to provide an environmental context to help identify and communicate potential environmental implications of development in certain areas of the State.

So, I think, again if you were with us in RETI 2.0, you saw this -- you saw, but weren't able to use on Data Basin this alpha, I'll call it an alpha level of development of the tool. But it's here in a screen shot and we're going to look at it in a bit and see how it's been updated since then.

And next steps from the RETI 2.0 Environmental Group Report were to continue to refine and complete the draft statewide data models and datasets, develop a user interface and controls to allow users to load their own GIS layers for assessment. Revise the Report Writer's report format, including presentation and organization of information. Add functionality to this tool to allow it to evaluate land use and general plan data.

And we have made progress on all those areas and we will see that today.

So, coming back to the new proceeding that was

opened by the Energy Commission staff, under the Siting Environmental and Transmission Division, is this Environmental Information for Energy Planning. So, there's a docket there that you can sign up for to receive more information about the work that's going on during this process. And there's a little discussion there and write up about our intent of what we want to do through this process. So, we're covering that as I go along.

One of the things that we want to do, as well as building the Environmental Report Writer tool that follows on from the RETI 2.0 environmental work, we also want to -- we're thinking of and laying out a case study that would look at the other elements of RETI and follow on from those where we identify some real-world situations of potential transmission need, and actually run the tool as it's being developed, to look at those areas and see how the tool and the environmental data perform to inform us on the environmental implications of thinking about it. Either reconductoring or working on specific areas of transmission constraint, adding new elements to the transmission system in the existing right-of-way or even, potentially, expanding existing right-of-way to accommodate new transmission needs.

So, the RETI 2.0 Report identified some specific

areas of the state that may have transmission constraints as we move to our 50 percent by 2030 RPS goal.

And just to throw out some numbers, there were two elements looked at in RETI 2.0. One was the IEPR Demand Forecast, which is done by the Energy Commission, and the Pathways Modeling that has been done for looking at what additional incremental increment of energy we might need to reach those 2030 50 percent goals.

And I won't go into this in detail, but if you go to the RETI Report, you can read it there. But in the IEPR Demand Forecast, a low of 9,400 additional megawatts to meet the goal, to a high of 20,300 megawatts to meet the goal, so that's with a midrange of 15,000. So, that's a pretty wide range of potential new generation that might be needed to get us to 50 percent.

In the Pathways Model, looking at both a straight line forward from where we are in developing renewables to an early electrification scenario, the range is 19,600 megawatts to 29,000 megawatts, so, again, a pretty large range.

But the two converge a bit around the mid and high level of the demand forecast and the low of the straight line of the Pathways Model.

So, if you look at both of them, both of the

models, the two estimates are derived from totally different assumptions, so they're not directly comparable. But if you look, the whole range could be from as low as 9,400 megawatts to as high as 29,000 megawatts that we need to plan for to get us to 50 percent.

Of course, that depends on a lot of things, other things happening. And a lot of things are happening and things are constantly changing. So, these assessments will continue to be looked at. And, of course, in the upcoming 2017 IEPR, the Environmental Energy Policy Report, there will be a new demand forecast as part of that.

But I'm just pointing that out so folks realize that we may still need -- to get to those levels, we may still need some additional transmission. So, we're not done planning for transmission yet, in California. And whether other conclusions of the RETI report, whether we bring the transmission -- well, whether we build in-state renewables or bring in renewable energy from out of state, from the other western states across the Western Region, in some of the areas of the State we'll run into the same transmission constraints of energy needing to run through those lines to meet California's demand.

So, again, if you look back at the RETI Report, just to summarize, there's areas -- so, in addition to looking at demand, the RETI Report identified areas of potential transmission constraint that folks should be looking at as to where we might need new transmission to reach the goals.

And those areas are identified here, on this slide. The main ones where there may be issues. So, in Northern California the report discusses the Oregon Intertie, which is essentially at transmission capacity now.

The San Joaquin Valley, where as little as 5,000 additional megawatts could trigger upgrade needs for transmission there.

And again, depending on what level of -- what we need to achieve the goals, 5,000 megawatts is not a lot, is not out of the question, potentially, given these modeling efforts that were discussed in RETI.

Couple that with the San Joaquin Valley planning work we did, which showed a significant amount of low environmental conflict lands in the San Joaquin would lead us to some potential future where we may need -- if we look there, we may be looking at the possibility of new transmission, at least upgrades in certain areas.

And then the primary area of concern was the

desert area south and desert area north, with a set of constraints that interact through these four areas that are listed here on the slide, Imperial Valley, Riverside East, Victorville, Barstow and Tehachapi.

And so, depending on where either distributed energy or additional utility-scale energy is built, and the paradigm of what areas get built out first or what areas get focused on that are listed there, as little as 2,000 to 4,000 new megawatts could trigger some transmission upgrades.

But in other scenarios, if it's evenly distributed, 5,500 to 8,500 megawatts would trigger some need for upgrades, certain sets of upgrades.

So, these are detailed and laid out in the RETI Report, if you'd like to go to that and read through them.

But again, whether this energy is built in the desert, which is a place in the State that has high resource potential, and good energy resource for solar and wind, whether it's build in-state or whether we bring more in from out-of-state that will come in through the same set of transmission lines. So, at some point, depending on how much we need, these constraints would be triggered.

So, we propose to take the information out of

the RETI Report, update it with any new information we have on pending transmission projects, and decisions by the ISO for the latest transmission plan. Look at assumptions that come out of the -- or, the results that come out of the latest demand forecast, and reevaluate the -- briefly reevaluate the concepts that were presented in the RETI Report to see which remain priority ones that may cause -- may be constrained by transmission that's out there. And we want to actually drill into those areas a bit.

And the result of what we're working on here is not to determine what the appropriate transmission is there, but just to look at some potential areas that might need to be upgraded to be able to run the tool, to see if the tool and the data that we put together deliver the kind of results we want for high-level planning. So, that will be the focus of our case study.

But we will be using and following on from RETI in these real areas of potential constraint.

So, so far in the Environmental Information for Energy Planning work, we did a staff workshop to kick it off, in April of 2017. So, we reviewed some of what you're going to see on the next couple slides.

We had a Lead Commissioner workshop on Interactive Data Platforms, which goes to the value of

the data and the kind of platform that we're putting together. We're working with CBI on Data Basin. That enables us to have an interactive tool that lets us work with this data. So, we discussed that.

And we are mixing this work with the IEPR work because we do intend -- the IEPR is driving this work. The last several IEPRs have talked about the value of large-scale landscape planning, the value of the data and the tools that we've been putting together. And have, as the opening slide showed, recommendations that we continue to develop and deploy this information for continued planning activities.

So, we are discussing some of our results of this work in the 2017 IEPR. That's why they're associated so closely together.

So, one of the first things that we're doing, that you'll see shortly, that we're doing to help integrate these things, so I showed you the separate gateways, earlier, that have information on them, but we'll be doing a couple of things.

One is we'll be rolling out this statewide energy gateway that pulls all of the information together. We will be integrating the data and results of those other planning activities. So, you'll be able to go to this one site and access those four or five

other planning activities that are ongoing.

We're also developing this gateway to house the results of this process that we're doing now, and the Environmental Report Writer tool that we're building. So, you would go here to access that.

And also, this is the landing place where you can access the California Climate Console, which is also a product that we've been developing with CBI. And we use that as an overlay with some of our transmission and generation planning activities in these various efforts.

So, soon you'll be able to go here and get access to all of that information and to the pieces that we're currently building. So, this will be the place we work from through this process.

So, the datasets that we pulled together, we're just in a nice summary graphic here to show you we've developed quite a bit of information for the Desert Renewable Energy Conservation area, which are the deserts areas there in the lower right on the map. So, those have a consistent set of data elements developed for them.

The San Joaquin Planning effort is there, approximately in the middle of the State.

And the RETI 2.0 process focused on these areas with high renewable resource value, and also two other

areas of the State that show high renewable resource value from various planning processes. And that includes the North Sacramento Valley, what you see there just above San Joaquin, in just the red outline. And then, the darker red outline up in the corner, which is the Modoc Plateau.

In the North Sac Valley some potential wind resources and, of course, PV, photovoltaic solar. In Modoc the same thing, some potential wind and photovoltaic solar.

So, part of this process, Environmental Information for Energy Planning process is working with CBI and others. We're working with partner agencies on a couple of other projects that are going on within the State to develop this consistent set of data elements for these two new areas so that we can fill those in, and then be able to use the tool across all these areas.

So, we talk about statewide energy planning, but these areas that are shown on the map are going to be the ones with the most data, and they are the areas with the highest resource potential value for generation.

So, work that we've done. Since our kickoff report we have environmental datasets, we have land use datasets, and we have energy datasets that will be key data that works within the report writing tool. And so,

we've worked on updating these datasets you see here in red. We continue to update those and work with them as we move through the process.

So, what you're seeing here is what I'd call the consistent list of common data elements. So, these are the data that we have available in all those areas. And if you haven't been tracking our work, please notice that some of these are not individual datasets. Some of them are actually data layers built from multiple datasets.

So, something like essential habitat connectivity areas contain multiple datasets. Something like the terrestrial landscape intactness dataset incorporates many datasets into a data layer that is more useful, powerful and useful than the individual datasets, alone.

So, when you have time to look at these on Data Basin, and we go through some of them in more detail you'll start to see how multiple datasets are integrated.

But part of what we'll test in our Case Study and be looking at is does this common set of data elements capture the right things and at the right level for those high-level planning exercises, for both generation and transmission planning.

Land use, we're working on land cover, and land use information, and agricultural land use. And related to agricultural use is always an issue in deploying renewable energy.

And so, we're looking at making sure we build that data into -- build that dataset so we have it to be able to use in planning activities statewide.

And then there's an error on this slide here. So, the energy data that we have here so far listed is not all necessarily private datasets. We used some shorthand here and didn't capture it well, so we need to correct this slide.

But the example I want to give is not all data will be downloadable from Data Basin. Although we're striving to make most of it available and downloadable from there, some things just aren't.

And one example is the transmission line and substations information that the Energy Commission maintains. That's not going to be -- it will be viewable, with some limitations, and some control by us in Data Basin and on the maps that we produce, and in the tool. But they won't be downloadable from Data Basin because folks with a need can get it from CEC, but it requires a nondisclosure agreement be signed.

So, we're not passing that responsibility on to

Data Basin. And there probably are a few other datasets, select datasets that the agencies treat the same way. But for the most part, most of them will be available either at the agency, and/or through Data Basin. So, that was the intent there.

So, for this particular workshop, comments, written comments are invited. They're not required, but they're invited. And they are due, typically, two weeks from the date of the workshop, which would be August 16th. And we would expect comments just on what we've presented today. And anything that you take from here, and go back and look at Data Basin, for instance, and want to comment on that about on what we covered, that's good, too.

So, there will be plenty of time in this process to work with the agencies and CEC on the data and development of the Report Writer tool. So, we don't expect folks to comment A to Z on that, but you're invited to comment as you wish based on today's workshop.

I think Misa already mentioned if you haven't been back to the site, the notice was revised. So, please get the latest notice, with the appropriate information to submit the comments.

So, we'll have more questions later, but if you

start looking at data, some things to start thinking about; which relevant datasets are missing from the application or would make it more useful?

And what are some different use cases that would be best for testing the functionality and value of the application?

So, just start thinking about those and keep those in mind while we go through Jim's presentation, which is coming up next.

So, thank you. And if you have any questions on this part, we'll open it up for that now.

Misa?

MS. MILLIRON: We have a question on the WebEx from Russ. Your line's unmuted if you want to go ahead and ask your question.

MR. TEAL: This is a very exciting project.

MS. MILLIRON: I'm sorry, could you speak up a tiny bit and identify yourself?

MR. TEAL: Oh, my name is Russ Teal. Can you hear me okay?

MS. MILLIRON: It's still pretty faint in the room here. Is there a -- let me try and play with our controls a little bit. Okay, can you try again?

We'll try. It's still rather faint, but we can hear you.

MR. FLINT: We'll listen closely.

MR. TEAL: It's a shorter question regarding how granular is the data in terms of using it for distributed renewable energy under one megawatt?

MR. FLINT: I'll let Jim address that a little bit, too. But the data is probably -- well, the data is of different granularity, so that's one thing to consider. So, some of it may be more useful and some of it may be less useful for that.

But generally, we probably need to do a little more work and refinement on the data to have it really do a good job at that.

I'll let Jim talk a little bit about that. Jim has another project that is actually looking at that, the use of similar data and similar tools for distributed generation.

Jim, are you -- Jim Stritthol, are you on?

MR. STRITTHOLT: Yeah, I'm here. Can you hear me okay?

MR. FLINT: Yeah, thanks, Jim. This is Scott.

MR. STRITTHOLT: Yeah.

MR. FLINT: Can you just give us a little outline of the difference between what's here and what you did for that other project?

MR. STRITTHOLT: They're similar. We've changed

-- in some of the datasets that we use there's different resolutions or different ways of aggregating it, especially with some of the models. That's one way to change the granularity.

You're right, all these kinds of applications that attempt to integrate a variety of different datasets there's a wide range of level of spatial detail. And that's why we try really hard to make sure that all of that information is transparent so people can use it appropriately.

So, yeah, you're going to have a variety of different things.

MR. FLINT: And we just want to -- this is Scott, again. We just want to remind folks that, again, our intent with this particular set of information tools is the high level look. It's not intended to be site specific or take the place of site-specific work when we get to that level of permitting a project.

But it is definitely going to be useful in letting you know what you're going to encounter there and what you're going to probably need to focus on when you do go to actually site a project. So, that's -- I hope that helps answer your question.

MR. TEAL: Great, thank you.

MR. FLINT: Thank you.

Any other questions?

MS. MILLIRON: I'm not seeing any other questions on the WebEx. Are there any questions in the room?

MR. FLINT: Thanks, Misa. No questions on WebEx, no questions in the room, so we'll move on to Jim Stritholt from Conservation Biology Institute.

And he's going to be doing a demonstration live using Data Basin and some of this information that we just talked about.

If folks -- I know folks in the room here might have a hard time seeing. Jim and I talked about that. And if you want to go up and huddle around the screen, please feel free to do that because you'll get a better look at what's he's presenting. On the results panel that's on the left side, it's going to be hard to see, so feel free to move around.

MR. STRITTHOLT: Can you see my screen okay?

MR. FLINT: Yeah. Folks on WebEx, you're good and you also avoided the heat by not coming to Sacramento.

We can see your screen, Jim.

MR. STRITTHOLT: Okay, great. Well, good afternoon everyone. And I intended to be with you in person, but I just couldn't make it. And believe it or

not, it's hotter in Corvallis, Oregon today than it is in Sacramento, which probably is a first.

What I'm going to show you, this is still under development. It's not full-featured, yet. But there is enough of it that's operational that I think it would be a good time to share it with everyone.

So, I'm going to show a couple of new things, as Scott was mentioning earlier, from kind of the alpha version we did with the RETI 2.0 path. And it sets up like this. And again, a lot of the stuff is going to look a bit skeletal right now because we have to add in a lot of the, kind of the help menu descriptions. That's why you see a lot of white space over on the left.

But this is how it is being developed. So, all of the controls and the results from this particular --

MR. FLINT: Jim?

MR. STRITTHOLT: Yeah, go ahead.

MR. FLINT: Sorry to interrupt. But if you can expand your screen for folks, I think you need to do it on your end by hitting those two arrows at the top row, on the WebEx screen.

MR. STRITTHOLT: Did that help?

MR. FLINT: So, then the part --

MR. STRITTHOLT: Is that helping or not? I just

increased my resolution. Does that help you guys or not?

MR. FLINT: That helps a bit but we need to eliminate the -- we can see the participants and everything. If we get rid of that block, it will be bigger for folks.

MR. STRITTHOLT: I don't --

MR. FLINT: Are you seeing any of the WebEx controls?

MR. STRITTHOLT: I'm not. The only WebEx controls that I see is the drop down from the top. My screen is totally vacant of anything except for the reporter.

MR. FLINT: Are you sure it's not us? Okay.

MS. MILLIRON: Okay, let me try and do it over here.

MR. FLINT: Okay, it was us. Thank you, Jim, we got it.

MR. STRITTHOLT: Okay. Okay, is this too coarse? I've zoomed in, but when you do that it's going to make the visuals a little bit coarse. Does this work okay for you guys or not?

MR. FLINT: It's fine. Folks here can -- most people are on WebEx. Folks here have moved up to the screen, so I think we're okay.

MR. STRITTHOLT: Okay. Does this work as well, or do you like it better at 125. I can go back out, if you'd like.

MR. FLINT: No, this is good.

MR. STRITTHOLT: Okay, I'll start with this. Okay, so as I was saying, so the way we've got this organized is all of the controls and the results that you see from the tool will be on the left side of the screen, where it's currently got a lot of white space because we have to fill it in yet.

And then, on the left side -- or, the right side of the screen you're going to see kind of general map orientation information. So, you can see the State of California. Down in the lower left are going to be different base maps that you can choose to illustrate whatever you want. It will default to this one.

In the upper right you'll see just the zoom tools. You can zoom with the magnifier. You can even -- zoom specific areas, if you'd like. You can even use your wheel on your mouse, if that's what you prefer. I'll do that once and back again.

And then in the upper left corner of this map viewer you're going to see a little stack of folders, or maps. And these are the datasets that we currently have loaded in the application. And you'll see there's quite

a list.

And as Scott was mentioning earlier, we have different categories of data. Most of what you're seeing on this list is environmental information. And I'm going to go through a few of these. I'm not going to show you every one of these. To give you a feel of what that looks like.

We have some boundaries, some DRECP and San Joaquin Valley boundaries. If I click them on, you can kind of get that picture. And we currently have some energy datasets, as well.

We will be adding some of the land cover datasets that Scott mentioned in his slides a few minutes ago. Those things are still being processed.

And we can add other datasets, as well. That's why it's important for folks to review and see what you think is glaringly missing. And, of course, over time things will be added as needed. As we get into the other regions that Scott showed earlier, with the Northern Sacramento Valley, or the Modoc Plateau there will be regional datasets that will be added as well.

In fact, if you look at the list here, you'll see a lot of these are statewide datasets, but you'll also see some, like down at the bottom, that will say DRECP. There's three of them, currently. And then you

have one that's the San Joaquin Valley and there may be more coming. And those are specific to those regions.

And so, we have statewide datasets, as well as regional datasets. And what happens when we step it down to the regionals, we get more granularity, to get back to one of the original questions that was asked. And those are relevant to those particular regions, of course.

Okay. Some of the datasets are descriptive in nature. If I click on these, you can see the transmission lines or the substations. You can turn them on and off. You can see, as I do that, there's a legend down in the lower right corner of the map and it does allow you to have some transparency controls. But it will not let you change colors and such. That's a Data Basin feature.

And this is an extension application. It is not using Data Basin technology. It's a different technology. But I'll get to that in a little bit as well.

Some of the datasets, like I said, are very descriptive in nature. Sometimes they're lines, points. Here's important bird areas from Audubon. And again, you can change transparencies and such, if you'd like.

Also, as Scott mentioned, some of the datasets

are more sophisticated. They're not just descriptive. They involve a lot of assembly and integration of a lot of other datasets to develop a kind of a more synthetic product.

Like, if I look at conservation values for DRECP, let me zoom in here, you'll get an idea that -- okay, this was actually a combination of lots of different data that went together to create this map or this dataset. And I'll show you another example in a moment, in a Data Basin context, so that you can understand that a bit better.

So, also I wanted to mention, and you'll note, you may have noticed that way up in the upper right there is a log-in button. And the vision for this, it's not wired together just yet, but it's in development, is that you can either create an account here or use your existing Data Basin log-in account. And this way it's not an application that's a one-off, where you come in, you do your stuff and you leave, and it's all gone.

You'll come in, create your account and you'll be able to save your information and come back any time you want. It's a bit of a -- it's a much more enhanced functionality. Because if you're going to use this to look at a variety of different things, you don't want to lose it as you go. You want to be able to connect it,

and keep track of it all, and manage it on your own.

And those log-ins also allow you to have high levels of privacy. So, this will be your private workspace, with your work, and your analyses that no one else gets to see unless you choose to share it with them. So, that's coming.

If I can use the analogy, the parts of the engine are all built. This part has to be wired back in.

Okay. So, how do you start? And we're trying to make this as easy to operate as possible. So, that's the objective here. There's a lot that's going on in the back room that the users don't need to get all entangled in, and make it complicated. We thought it was going to be really important to make this as streamlined as possible, but also very rich and informative. And that's what we're trying to accomplish in building something like this.

So, it works like this. You hit "define areas" button and you have two choices. You can draw a polygon, a line, or assign a point, or you can add a shape file from wherever you happen to be working. And I'm going to show you examples of each of these in just a few minutes.

And if I were to go ahead and draw a shape,

let's say I want to work down here. And let's say I can turn on something for background, I'm going to turn on transmission and substations. And I'm going to put in the 368 corridors. So, I just put that as background.

Again, I could change my base map if I want kind of an imagery version. I'll go back to my original.

And let's say, this is just for example purposes, I'm interested in a new transmission line or an upgrade on an existing transmission line, what would I do? You click the line tool. You would set a buffer distance of whatever you want. I'll just leave it at a mile. We're going to be adding other units here shortly. Right now, it's just miles. But we can do meters, kilometers, feet and miles. Those will be the four choices. It will be a little drop down here. And you draw your line.

So, let's say I want to go, from here to here. And now, I've got a new line. Again, I can turn off all the base information if I want. Let's just say that's my line. And once I'm satisfied with that, I just hit run.

And all it's going to do is it's going to take that shape, and it's done, and it's running it against all of the different datasets that it encounters. And we broke it up into three tabs. There's the

environmental tab, which is exposed first. There's land use that I mentioned, that the data are coming soon. And then here's the energy tab.

If I click the energy tab, you'll see the various energy datasets that were in the original stack that I started with.

If I go to environmental, it will go through a whole list of different datasets and gives you background information. This one is what's the current protected status? These are restricted protected lands within that buffered distance.

The majority of it is unassigned, which means that it's not restricted. It's almost -- it's 69 percent of the area. If I hover over the bar, it gives me the actual numbers of acres, if I choose.

If I wanted to look at other pieces of information, let's say I'm interested in its intactness. And this is a model that we've developed, so it's not just a single dataset. I can show you the results of the model by clicking the little flag. You'll see it coming up and here's the legend.

Very high integrity or intactness would be dark green. To very low intactness is dark blue. It defaults with a certain level of transparency to kind of help you begin to see relationships for things.

And if I want to know, well, what is this dataset and can I get it? So, for the majority of the datasets in this type of application there's another icon here, and this is you view it in Data Basin. If I click that, it brings it up in Data Basin.

Well, now we're in a different application altogether, but it has all the information about this dataset. How it was built, what went into it, there's all these attachments with explanations, and you can download it onto your desktop, if you want.

So, the idea, again, is to be highly transparent in what we're doing, especially with the datasets of this nature, which are very synthetic.

And if you click on "open" in "map", it will open up a database in "viewer", which is a different thing. But it actually allows you to really dive in deep and look under the hood, and you can look at a variety of how this model was built. There's a lot of exploration tools at your fingertips, so you're not left in the dark about, well, how did that come about? Why is that green? And why is that blue? Those features are all provided for you here.

If I want to see what this particular cell is, we were down here, and it's actually going to give you values for everything as you go, the numbers and so on.

Each one of these little boxes is actually its own map. And so, if I wanted to look at kind of the intermediate products for this thing like -- I'll give you an example. This is "linear development." It's going to actually render a new map. It's spinning up, now, and it will display it on the screen.

So, if you wanted to look at the ingredients, as they are assembled, you have it at your fingertips now. So, there shouldn't be any black box nature to any of this stuff.

So, that's how that's done. And again, you can download it, read about it, whatever you want to do. So, this is Data Basin.

Now, I'm going to go back. I'm going to leave that and I'm going to go back to the Reporter, because here it is again. Okay. And you can continue to go through a variety of -- is there any designated critical habitat? Here's a list of all of the California CNDDB data. This is the heritage data that you encounter with this buffer distance.

We have information on important bird areas. I showed you that earlier. Let's look at some of that. Here's important bird areas. There's none in the area, great. Okay.

Since we're in DRECP, you have other datasets

that you can explore. Here's "conservation value" and here's the accompanying map with it. Oh, it's an area that's kind of mixed bag and here's histograms for it. Most of it's moderately high conservation value in this particular corridor. Well, what might be there would be another logical question. What species might I encounter that I'd need to plan for?

Well, if you look at the species that are covered in DRECP, these are the ones you may encounter. Desert Tortoise, Mojave Fringe-Toed Lizard, and you can read the rest. And it gives you a full listing and also gives you the area based on their modeled distribution data.

So, it's all at your fingertips to help various -- to help you make whatever decisions you need to make.

Now, one of the other features I wanted to show you here -- I'm going to turn this off so it's a little easier to see. And I'm going to zoom in. And let's say this is all -- I'm trying to show a functionality. I'm not saying this is what you would naturally do.

So, let's say, you know, I want to modify this. Maybe I want a different version of this. You'd go back to "define areas" and you hit an "edit" button. And you say, okay, I don't want it to go that route, I want it to go this way, instead. I want it to come up to here

and I want to bypass that. And you say, okay, I want to save that. I've changed my route. I can run it again and it's going to come through and it's going to give you, okay, here are the species you're going to see. It's going to give you all new results for that new shape that you just described.

And once this is fully wired, you'll be able to save that into your personal workspace and say, oh, here was option A, here was option B, here is option C, and then you can keep a record.

Now, when you're through with whatever you're examining and you say, okay, now I want to keep this and I want to take it to another -- either put it into a report, or I want to examine some of the statistical data in Excel. I want to hit the "download" button. So, I go down here and I hit "download" and it gives you two choices.

I can go to an Excel spreadsheet or I can go to a PDF. I'll just click the "PDF" and let it spin up. It's going to present it on one of my other monitors, so I'll drag it across when it's done. It's done.

Okay, so I'm going to drag across what I'm seeing on my other screen, so you can see mine. So, hang on, I'm working on it. It's being -- there we go. Can you see that okay?

So, I'm going to go to single-page, just to give you a look. So, it gives you a sample map of where you were. Whoops, I went too fast. Sorry, guys. I'm going to do page down, instead.

And this is not fully developed, yet, because we want to add a lot more explanatory text. So, what am I looking at and what does "GAP status one" mean?

Well, in this case it's described. But in some of the other pages you'll see it's kind of missing some of that important summary information.

So, here's the summary for that. Here's intactness. Here's designated critical habitat, how many acres and which species you encountered. So, there's lots of results that are just spun up for you on a variety of topics.

Here's a list of the potential species in their areas. You get the idea.

So, if you went the other route, if I said, no, I want it in Excel, it's not going to look the same, but it's going to be the actual values. I'm going to click this on and I'll drag it across so you can see it. It's going to be handled in a series of tabs.

So, the first tab was that sample map, protected areas, numbers. Now, you'll see it all in an Excel type format. You won't see the graphical elements, but

you'll see the actual numbers behind it. And then you can do whatever you want to do with it to satisfy whatever reporting you'd like to do. Okay.

So, let me go ahead and let me show you a couple more things and then I'll stop and take questions. Oh, I know one thing I wanted to share with you. So, let me zoom out. Sorry, hopefully, I won't make you seasick when I do this. I'm going to turn these two things off.

And let's say I want to upload a dataset instead of drawing one. I have a shape file. I've been working in this area and I want to evaluate what I've been working on. So, you go back to "defining areas" and you click on "add a shape file". And it's going to come back with a warning and saying, okay, you're now going to do something different, I'm going to throw out what you were working on.

Now, if you had saved the things you had just drawn you don't care, right, because it's sitting in our folder and you can just call it back up later, if you'd like. But right now I'm just going to get rid of it and I'm going to say, okay. And it's going to say, okay, upload your shape file.

So, what you're not going to see -- I'm going to show it to you and then I'm going to pull it away. Let me do it this way, maybe this will work. Let me try

this.

Okay, so I pulled up another panel on my computer and you can see a couple of shape files. I'm going to grab the actual zipped file. I'm just going to drop it and go, and I'm done.

So, now I have -- in this particular file was some Inyo County planning areas. And now, I can select one or more of these to evaluate. Let's say I want this one, and I'm just picking some at random. This one, and this one, and this one and I'm going to run it again.

And so, this will show a couple things. It's actually evaluating all of them and you're going to get separate results for each one of them. So, this comes in handy when you want to compare places. I have several candidates that I'd like to look at and see what the results might be.

Now, which ones of these; do any of these hit? I think they're all out of designated. Great, no designated critical habitat was hit. What about species stack? Okay, which species might they hit? And it gives you a listing for all the ones of each of those shapes and then you can do some planning with it.

Oh, this one is a lot lighter. In fact, I think one doesn't have much in it. Oh, shape A, which is up here, didn't have any compared to some of these others

that had more. That kind of thing, it allows you that level.

And again, if I do the download, this might take an extra moment or two because there's more being packaged up. It's done, so let me drag it across again. Hopefully, I can do this right.

Here's the PDF, again, version. It shows you the four, labels them. But what I wanted to show you is so, now, you're looking at them together and it makes it easier for you to do your comparison. This is the land management status for each one of those. They're not all the same, right?

Here's what the intactness looks like, the profiles for each of those sites.

And then based on those, you can make whatever decisions need to be made, where you do any site planning, or more detailed planning, or whatever. So, that's the idea there.

One last thing I wanted to mention and I think I'm done and then I'll take questions. Is that for some of these you're going to notice that there may be two versions. And let me show you an example of what I mean.

So, here's essential connectivity maps for the State. We also have data on connectivity linkages and

conditions within DRECP, in this case. This is a stepped-down version of the other one, so you just need to be aware. And all of this will be fully reported, so it's clear, but there will be cases sometimes where you see, well, wait a minute, which one do I use? I have a statewide version and then I have a regional version.

Typically, it's best to go with the regional versions because it's more refined. But you have both at your disposal and you can use whichever one you choose.

Scott, did I forget anything or are we good?

MR. FLINT: No, Jim, I think that's good for now. Just one thing to point out on that, the statewide versions are in there for -- you know, there might be some areas that aren't immediately going to have a step-down connectivity assessment, for instance, so the statewide dataset's there so you can still assess habitat connectivity, but you'll be doing it, again, at a higher level.

But it gives you something to look at related to that important habitat element.

MR. STRITTHOLT: Right. Questions then? I'm going to hit a refresh and just reload it from scratch and start with this is what you get when you start the applications.

MR. FLINT: And so, this is Scott Flint. I just want to preface questions by saying -- so, we're probably between an alpha and beta version.

MR. STRITTHOLT: Yeah, that's right, that's where we are.

MR. FLINT: A lot of significant work has gone into here, but as Jim pointed out, some of the areas need more work.

We will be adding datasets over time to those other areas that I'd shown on the slide.

But as far as the Report Writer tool, itself, I think we want some help with how we display the results on the left panel and what's most useful for people, and how the report formats and comes out, and what's most useful for people.

And a lot of the attributing and explanation is missing, as Jim said earlier. So, that's a lot of work that we want to do together, I think, in this process.

And then the CEC will be doing the work to let folks evaluate on how -- in our Case Study, how well this information provides the high level planning look for some specific areas that were identified in RETI 2.0.

So, those are the things that we would want to focus on, I think, really, focus on going forward. And

I think part of that is also evaluating do we have the right set of the common data elements, at the right resolution, or what should be our next steps on that?

So, I think those are three primary things we want to do going forward as a group.

So, I just wanted to throw that out there before people started asking questions about the Environmental Land Use Report or tool that Jim just showed.

So, now, I'll go to Misa and see if we have questions on the WebEx?

MS. MILLIRON: We have one on the WebEx from Russ. You're unmuted.

MR. TEAL: Hi, this is Russ Teal, again. Is the GIS data used in Data Basin available for other GIS projects?

MR. STRITTHOLT: If I heard the question, it got a little faint towards the end more, the question was, is the dataset in Data Basin available to be used in other systems?

MR. TEAL: Yes.

MR. STRITTHOLT: Okay, yes. So, in fact, let me go back to Data Basin. So, here's Data Basin and here's the intactness layer, for example. You would just download our GIS layer package or zip archive and you'd put it on your desktop, if that's what you'd like to do.

MR. TEAL: Great, thank you.

MR. STRITTHOLT: Uh-huh. Other questions?

MS. MILLIRON: I'm not seeing other hands raised online. I just wanted to remind folks that we do have a handout of all the datasets and links to where you can find most of them, posted online and outside on the table. So, if you want to dive more deeply into these datasets, that's available.

And anybody else in the room? It looks like we have one question in the room. Please introduce yourself and come to the podium.

MS. LESLIE: Can you hear me? It seems like it's working.

MR. STRITTHOLT: Yep.

MS. LESLIE: This is Emily Leslie with Defenders of Wildlife.

MR. STRITTHOLT: Oh, hi, Emily.

MS. LESLIE: Hi. This is really impressive work here. Thank you for presenting.

My question was, is the -- so, the datasets that are there, that get used in the construction of the report, are they modifiable at all? Like, could a user add another dataset to be included in the report?

MR. STRITTHOLT: Ah, a very good question. Right now, this next version, no. Is it possible in the

future? Yes. But we're not there, yet.

And there's got to be -- and this is where it gets a little tricky, right? If you want this to be a standardized way of reviewing things, so that has to have that level of integrity, but we also are introducing the feature of log-ins and your private workspace, and that adds a whole other level of potential utility. Where you would create your log-in and then you would add two of your own datasets, but they'd be in your directory and not -- you wouldn't be mucking up the standardized version, in other words. That's down the road. It is a doable thing. Technically it's a doable thing.

MS. LESLIE: Okay, it sounds good. Thank you.

MR. STRITTHOLT: Uh-huh.

MR. FLINT: And there are other ways to think about doing that, too. If I'm right, Jim, the other way that could be built is the way that the Climate Console works, where you can actually generate your picture and then take it into Data Basin and add more datasets and examine it there, right?

MR. STRITTHOLT: Yeah. Well, the basic functionality that we're displaying, which is really managing a variety, one or more shapes, and being able to buffer them and assessing the intersections, that's

really the operation that's taking place.

We have that as a premium tool in Data Basin, now. So, you could create anything you want and run it against the stack.

What you won't get is you won't get a kind of a standardized way of reporting it out because we're trying to keep it really simple, so users don't have to invest so much energy into operating it.

So, to go back to the original question, we already have that feature in Data Basin, and it's a premium feature that people can draw stuff. It's not as straight forward as this. This is really boiling it down to make it super easy for folks to use.

MR. FLINT: Well, I don't see any more questions here in the room, so we'll move on to our next presentation on the agenda. Thank you, Jim.

MR. STRITTHOLT: You betcha. Thanks, guys.

MR. FLINT: So, next we have a demonstration of the Section 386 Energy Corridor Mapping Tool. The BLM has a tool that they use for their work in the 368 Energy Corridors Program.

So, a couple of long-term things to think about, one of our charges in RETI was we were working on this tool for California, but how do we integrate it west wide? So, that is something further down the road on

our list of things to do, once we have the thing up and running here. And we do participate routinely in the WECC Environmental Group and we'll be doing that more regularly going forward.

And where they're reconstituting all of those committees and we do have a representative there. So, the opportunity's there and the timing will be right soon to start that.

I think the same thing working with our partners at BLM about integrating more tools and data will probably be in the future, also.

With that, I'll turn it over to Georgeann. I think you were going to lead off the presentation, is that correct?

MS. SMALE: Thanks. Can you hear me?

MR. FLINT: Yes, you sound good.

MS. SMALE: Thanks. And Emily Zvolanek, with Argonne, actually has the slides, so we want her to share her screen. And we just have a couple introductory slides and then we'll do a demo.

So, I believe it's just going to be Emily doing the majority of the demoing of the tool. Myself, I'm Georgeann Smale. I'm in the Washington Office of the BLM. And I'm not sure if I see Scott Whitesides. He's the Project Manager for the Section 368 Regional

Reviews. But I'll run through this introduction.

Emily, can you go ahead and advance? So, our tool is available online. We just have the web link on the next slide. There you go. And that's how you get to the 368 Mapper. And if you forget where it is, just Google Section 368 or Google West-Wide Corridor, either one, and the first site that comes up is the Argonne website that hosts the Mapper.

Just to catch everyone else, make sure everyone's up to speed and oriented to the Section 368 Corridors, I just have one slide, the next slide with a little bit of background.

I believe this audience probably is familiar with these corridors, but for a very brief overview -- oh, this is interesting.

The Section 368 Corridors were -- Congress directed the agencies to create these energy corridors under the 2005 Energy Policy Act. And we did do a programmatic Environmental Impact Statement.

And in 2009, the BLM and the U.S. Forest Service designated corridors on their respective lands. BLM has about 5,000 miles of energy corridors and Forest Service nearly 1,000 miles. There are 131 corridors total. Their width is variable. In California, they are two miles, generally, but elsewhere they're generally about

1,500 feet wide.

The corridors are the preferred, but not mandated, location for future energy projects. And that would be oil, and gas, and hydrogen pipelines, and electric transmission and distribution.

So, they were designated in 2009, but the agencies were sued over that designation and we reached a settlement agreement in 2012. And under the terms of the settlement agreement we are periodically reviewing the corridors on a regional basis.

So, those periodic regional reviews, our regional reviews started last year. And we broke the 11 Western States up into different regions. And we are pretty much completed with the first regional review.

And just to update anyone on the phone who may have been part of that or commented, we did actually collaborate with RETI and did get some of our corridor information into the RETI 2.0 Report and some of the RETI 2.0 Report into our Region 1 Report.

That report is in draft right now. It's going through a final review within BLM. And then, we're going to release that draft report for a 30-day comment.

And the time frame for that release is hopefully late summer, early fall. And that's the update I have for that regional review.

We'll show you the regions. This slide will end and we'll go right into the demo and we'll show the regions I'm talking about, Region 1.

And then, the next regional reviews are starting internally. And we are looking to consolidate some of the regions. And we just got the word that we are going to move forward with this. So, we're planning on doing Region 2 and Region 3 review combined. And we'll be starting internally, in September, and we'll have a project schedule up sometime in September, up on the website for that.

So, that's the summary of the corridors and the regional reviews. And with that, I'm going to turn it over to Emily.

MS. ZVOLANEK: Thank you, Georgeann. Yes, as Georgeann said, my name is Emily Zvolanek and I'm working -- or, I'm at Argonne, working with BLM on this project. And so, you can either access the Mapper via the link that is in the PowerPoint slide, that everybody should have access to on the webinar's website. Or, as Georgeann said, you can Google the Energy Corridor Information Center. And if you do that, this is the home page you'll see.

And if you go to this "maps and data" tab, you'll be able to launch the Mapper directly.

So, the first time that you launch the Mapper, you will -- the Flash screen will show up and you have the option to either register or to continue without registering and logging into the site.

And the main difference between the two is being able to view the infrastructure data that's proprietary, that we have a contract with.

So, if you create a log-in and register, you'll be able to see the transmission line substations and pipelines that we've contracted with Platts to display in the Web Mapper.

If you don't do that, you'll still be able to see every other dataset we have in the Mapper. You know, environmental data, non-Platts infrastructure data, like the EIA power plant data. You'll still be able to see land management information and other compatible and incompatible land uses. So, there's still a lot without registering.

But I want to show you the infrastructure data, so I'm going to log in. It's a very simple registration process. And then once you log in, this is the default page.

As Georgeann mentioned, there are six regions. Did you want to say anything else about the regions, Georgeann?

MS. SMALE: Well, they're in blue. They're the regions -- and, Emily, if you can zoom in a little bit? The southwest, the desert southwest is Region 1, so that's the regional review that we're getting close to completing.

Regions 2 and 3 are -- I'm referring to them as the Four Corners States, plus a bit of Nevada. So, you can barely see the headers there. But Region 2 is the Mexico, part of Colorado, et cetera. And Region 3 is the other half of Colorado, Utah, a little bit of Nevada. So, that's the next regional review we're going to do. And that's it, thanks.

MS. ZVOLANEK: Okay, thank you. And so, one of the benefits of this tool is that it's available to all stakeholders, and one of the reasons for that is that on the website there is an ability to comment on specific corridors based on their location and their milepost location.

And so, stakeholders can use this took to focus their -- if they have a concern, to help them focus and pare down the location of their concern, and then input that into the comment form.

But to get back to the Mapping Tool, so we have our basic, you know, zoom in and zoom out pan tools at the top here. And then, but one thing that is useful is

we have bookmarks for all of the corridors. So, if you are interested in a specific corridor, for example -- or a specific region, it will take you to the general area of that region.

If you are interested in a specific corridor, you can also -- you know, instead of having to zoom around, yourself, and try to find it, it will -- the bookmark will take you exactly to the full extent of the corridor that you're looking for.

On the left here we have the table of contents that has all of the data sources. You know, you can either -- it's quite -- we've tried to make it quite comprehensive based on inputs from the various BLM and Forest Service field offices. So, there's a lot of data in here.

So, you can either go through and look at it on your own or, if there's something specific that you are looking for, you can type it into this search box.

So, you know, for example National -- I can spell it -- you know, if you're looking for National Trails, just type in "national" and it will appear, the historic trails, study trails and scenic trails.

But it includes, as I mentioned, a lot of data. But it's a lot of data that's focused on siting factors related to energy transmission. So if, for example,

under "ecological resource areas" we have Desert Tortoise critical habitat and we have -- I know sage grouse is not really an issue in Southern California, but in other states that are in the Section 368 area, the sage grouse data. We've got the Mohave Ground Squirrel.

We have a significant number of specially-designated areas, like areas of critical environmental concern, the various trails, national monuments, wild and scenic rivers, wilderness areas, wilderness study areas. We've also included the protected areas database.

And so another thing you'll notice next to the title of the data, there is these little buttons. And if you click on the little book button, fully populated metadata will appear in a separate tab, which will give you, you know, at least the source of the data and how old it is.

Most of the data in the Mapper is data that we've not necessarily compiled at Argonne, but we've gotten from BLM field offices and other people who specialize in a specific dataset, like the trails. And so, we've got the metadata so that other people who visit the site can tell where the data came from.

You may have noticed that when I checked

something in the table of contents that they all showed up down here in the layers box. Things might not necessarily pop up in the order that you want them to, so you can actually move things and adjust things, if you want to.

Also, aside from moving layers, you can adjust the transparency. Most things are defaulted to 50 percent opacity, so you can make them more or less transparent based on what's useful for you.

MS. SMALE: And, Emily, this is Georgeann. Again, this is primarily to help the stakeholders comment during the regional reviews. And this is useful, when you zoom in sometimes layers can interfere. Can you zoom in a little closer and show some of the mileposts?

MS. ZVOLANEK: Yes. And so, yes, because this corridor is so long the mileposts show up at the full extent. But each corridor has mileposts associated with it that run the extent of the corridors.

So, if a stakeholder is looking to identify an issue, you know, on the comment form they can say there's specific issues between mileposts 94 and 99, for example, which makes it easier for the people working on the reviews to identify the area that someone has an issue with or a potential issue with.

So, one thing that I want to show you, or there's several things. So, defaulted is a street-base map. We also have imagery and topo-base maps, and then and open street map base maps, which is useful if you want to print from "print a map" from the Mapper. Because of some copyright or legal reasons, the only base map that will show up is open street map base map, if you want to export your map as a PDF. If you're just looking at the Mapper, though, you can use any of them.

I'm going to zoom in on the Genesis Solar Energy Project just to show you some more examples of the functionality of the Mapper. I'm going to turn on the transmission data, if I can find it. Here we go.

So, one of the things that I think is useful about our tool is the info box, in that you can get a lot of additional information, aside from just where something is physically located, by clicking on the info tool and then clicking on a feature in the map.

So, for example, after I clicked on the transmission line we can see, you know, who owns it, or who owns the substation, who owns the transmission line, the voltage, whether it's operational or not and also, most importantly, the accuracy. Because if you're not familiar with the Platts transmission data, the accuracy can vary, but they always have a rating.

And if we zoom in a little bit more, you can actually see how in this case the transmission line, you can even see it on the aerial imagery. And you can see how it connects right into the power station.

And you could also get similar, whatever information is stored in the GIS data, you can get that from any layer. So, from the power plant layer, as well, we see that the Genesis Solar Project, the total megawatt generation.

I'm going to zoom out a little bit just to get the corridor back into the Mapper, because another useful feature of the Mapper is this view abstract tool. Now, once you've clicked on this button and you click up the corridor, and a separate tab will pop up the abstract that is related to each corridor.

And these corridor abstracts were developed to provide an initial analysis of the Section 368 Energy Corridors. And they're designed to help determine whether the energy corridors are achieving their intended purpose. The abstracts are intended to assist the Federal land managers and stakeholders in identifying specific environmental concerns, and other challenges such as pinch points, for each Section 368 Energy Corridor, and provide a condensed record for each.

So, right now, we have the Region 1 abstracts up and these are the drafts that were publicly released for the initial comment review period. And updated abstracts will be released when the Region 1 report is -- will be added after the Region 1 report is released.

But you'll see that if you scroll through an abstract, there is additional maps at each abstract, along with a lot of information detailing, basically, everything going on in and within the near vicinity of these corridors.

And since we have a close up view of the mileposts, again this is where the -- if I go to the "getting involved" page and the online input form. This is the comment form. And so, this is where knowing the mileposts really comes in handy. You can indicate if you have a specific topic relating to your comments. And in the input section you can say, you know, where exactly, what milepost is your area of concern located.

And you can see, you can get them from the Mapper.

And so, very super quickly I wanted to show you just that they exist, three other tools that you'll see look very similar, that we've also created to help assist the BLM with their planning or potential planning purposes.

So, we've got the Solar Energy Environmental Mapper that was created for the Solar PEIS that was the ROD came out in 2012.

We also have a Wind Energy Mapper that was worked on for the BLM, for the same region as the WECC area, the 11 Western States. Looking at things that could hinder wind energy development, and we have the data in here.

And both these have detailed reporting functions that Section 368 Mapper currently does not have.

And then there's also the Energy Zones Mapping Tool that has a repository of over 250 layers pertaining to energy development for all types of energy, renewable, standard, coal, nuclear, hydro, all of the above. And has some pretty interesting modeling capabilities.

But that is all that I have and all I wanted to show you.

Georgeann, do you have anything else to add?

MS. SMALE: No, that was good, thank you. I think we're ready for questions.

Scott, can you -- Scott or Misa, can you help us out and if we have any?

MR. FLINT: Yeah, we'll do that. Thank you, Georgeann and Katie. Oh, sorry, Emily.

MS. ZVOLANEK: That's okay.

MR. FLINT: So, any questions for the BLM or our Argonne folks?

Misa's checking the WebEx.

MS. MILLIRON: And I'm not seeing any right now, no raised hands and no questions in the chat box. But we do have one in the room, so please come forward.

MS. LESLIE: Hi, this is Emily Leslie with Defenders, again.

I wanted to ask -- first of all, thank you, this is really several very useful tools here. Thank you for all your hard work.

And then I wanted to ask is the transmission data that you're showing here, of existing infrastructure, downloadable or shareable across platforms? Like, could we look at this data in Data Basin?

MS. SMALE: No. And that's because we have to contract with the companies in order for us to even access it. And so, that is pretty much the only thing in the Mapper that we are not allowed to distribute to other people.

MS. LESLIE: Right, that's what I was guessing but just checking because it's something that people always want. Okay, thanks.

MR. FLINT: I think that was it for questions. So, thank you.

MS. ZVOLANEK: Great. Well, thank you.

MR. FLINT: Thank you very much for that presentation, very nice. Now, I've got a lot more stuff to play with this afternoon unless it gets so hot the electricity goes out. Thank you.

So, back to our agenda, just a couple things, before we move to public comment, to close out the discussion.

One thing that I forgot to mention and I want to go back and, if you have your slides there, it's not important, but if you want to look at it later, now, on the Case Study approach we -- I talked about multiple areas in the RETI Report, and on the slide it lists a whole bunch of areas. We don't intend to do all of those areas in our Case Study. We're going to do some preliminary work and then pick a couple out.

So, we might look in a couple of areas and a couple of those, and maybe a couple of areas in the Desert Constraint Area, and maybe somewhere else, but we're not going to look at all of those areas. I just wanted to let people know that.

The RETI Report does prioritize where they think action would be needed first, so that would be part of

the input into how we select. Plus, information we get while we update information about transmission projects.

So, I forgot to mention that and I just wanted to hit that one.

So then, just one last reminder, a little bit about next steps and the schedule. So, we talked about the written comments pertaining to this workshop, August 16th. And please go see the revised notice that has the correct instructions for filing for that.

Just in general, where do we go next? So, as I said earlier, we're between alpha and beta so we've got some work to do. We want to do that with this group as we go forward.

Many of the datasets are available now. They're accessible through the different gateways, for the different projects that are listed in the slides that we have led or participated in for energy planning.

And we will be consolidating the access to those soon, so it will be a little easier to access. But folks can look at datasets right now. If you want to wrap your hands around them and really understand them, that's available now.

As far as the Report Writer, itself, when it's available we will convene a webinar, so we'll do it by webinar. We'll walk through it again, and the features,

and what's changed, and talk to folks about how they can access it. Because we want to work with people and give them a chance to have hands on to get some good feedback going forward in the process. So, that's probably in the October time frame, this year, that that might be available to start that. Maybe a little earlier, but let's just think about October time frame.

And then, we want to work collaboratively through the first quarter of 2018 on completing the elements of the datasets and the tool, so that it can be available with its full functionality in March or so, of 2018.

So, that's kind of where we go next with that. It's nice not to be in a big hurry to do something. And this year I don't anticipate November or December workshops that collide with the holidays, hopefully. That will be the first time in six years, so that's good. But I'm sure some will come up, but it won't be this.

So, that's a rough overview of a map of the timeline going forward, so I just wanted to get that in there.

So, now, we'll open it up for -- so, if anyone's made a comment, a comment already that's part of the public record. But if you want to make a specific

comment at this time, during the public comment period, we'll open that up and we'll go -- let's go first in the room, this time.

So, anyone in the room with a public comment, please come to the podium and identify yourself. And we do have at least one so --

MS. KELLY: Good afternoon. Kate Kelly with Defenders of Wildlife. This is not so much a comment, as a thank you, as the tool is starting to roll out it's really exciting to see and really appreciate the hard work that's gone into it. I think it's going to have great utility, not only for renewable energy planning, but for land use planning at the landscape level, and the local level statewide, and particularly for local jurisdictions that may not have the bandwidth to develop such a tool.

So, I'm really encouraged to see it and I'm thankful for the work that you guys have been doing on it.

MR. FLINT: Thank you, Kate.

No other hands in the room, so Misa's checking the WebEx.

MS. MILLIRON: I've got a public comment from Steve Mills. Go ahead.

MR. MILLS: Good afternoon. Can everybody hear

me?

MR. FLINT: Yes.

MR. MILLS: Okay, good. Again, my name is Steve Mills. I've noted there's a lot of enthusiasm today for what's being called landscape level energy planning and geospatial data platforms, and the like.

But at this point the approach is just theory, it's never actually been field tested. I guess one limited exception could be San Joaquin Valley, but that's an area where there's a super abundance of ruined, salt-contaminated land that can no longer be farmed, so it's not a real test as far as how best fit/least conflict would actually work in our deserts, or really anywhere else.

And, certainly, landscape-level planning has never been shown to work across the states. I think we have 105 million acres of micro-environments.

And if the DRECP and RETI 2.0 are any guide, a landscape level approach would most certainly not preserve or State's human and natural communities.

For starters, their declared purpose is to site a whole lot of new, big renewable energy projects. And their underlying ethos is that no matter what damage these projects would inflict on the local population and the local habitats, geographical winners and losers have

to be chosen anyway.

So, it's no surprise that they use a landscape level approach to zoom out from actual conditions on the ground and to rationalize away all the ecological and social damage that these big projects would create, as well as all the inconvenient environmental science about what's actually happening. For instance, to groundwater, sub-basins, wildlife connectivity corridors and habitats.

I wrote a letter to the CEC about all of this, date June 7, 2017. It's 19 pages. I just don't have time to go into that level of detail.

I note that Mr. Flint said today that landscape level planning is not intended to supplant site-specific detail. But the purpose of landscape level planning is to pre-anoint certain regions for utility scale and transmission development. In fact, that's really the whole premise behind the DRECP.

And so-called landscape level planning has not been transparent and collaborative, other than for large interest groups that are bent on imposing large-scale projects on local human and natural communities that will be the ones that will have to pay the ultimate price for them.

And I think worse yet, landscape level planning

doesn't even consider whether we even need a bunch of new renewables and transmission. The entire premise is that we do.

Well, we actually have an increasing glut of renewable energy in the State. According to a June 22, 2017 *Los Angeles Times* article curtailments of solar and wind production for the first quarter of 2017 were more than double the same period last year. And existing power plants run on average at slightly less than one-third of capacity and are being retired early.

On top of that, California has even paid other states to take excess generation off our hands.

The Office of Ratepayer Advocates noted in their comments, in PUC Proceeding 15-02-020, that the IOUs are on track to meet their RPS requirements and won't have a procurement need until 2023.

I'd also note that the EPA recommended, in a February 23, 2015 letter, that the REAT agencies, which were the people behind the DRECP, reevaluate the amount of renewable energy that may need to be produced in the plan area.

So, neither the DRECP nor the RETI 2.0 directly study that issue at all and it doesn't look like that will be addressed in this process.

And my question is what kind of planning is

that?

We urge that the Commission not be taken in by all the hype around landscape level planning and that they take a fresh and realistic look at what it would really mean for the economic and environmental future of the State. Thank you for listening to my comment.

MR. FLINT: Thank you.

Misa, any other comments?

MS. MILLIRON: We have one more comment on the WebEx, John Zemanek. I hope I pronounced it right. Please introduce yourself?

MR. ZEMANEK: Yes, I'm John Zemenek. Your pronunciation was pretty darn close.

These tools are really fascinating, very sophisticated and I'm very impressed with them. But I did want to make kind of a landscape scale comment about IEPR's bias towards landscape scale analysis. IEPR's very big on the DRECP and RETI 2.0. I hear about those processes a lot in these WebExs.

I don't hear, however, any real critique of how well these landscape level methods do or don't work. And the fact is that landscape level, the DRECP came in for lots of criticism from many different informed sources. It was very zoomed out and it did not do a good job of comprehending what was happening on the

ground.

It also took a very unenlightened approach to where wildlife corridors actually are, and how they work, and how they hold up or don't hold up when they get fragmented.

RETI 2.0 doesn't provide any real siting or environmental analysis. It does assign a hypothetical mega-wattage of new utility scale projects in designated geographical areas. For instance, the 5,000 megawatts of new projects assumed for Victorville/Barstow TAFA.

It does all of this on a kind of a what if conceptual basis for study purposes, only. There's no real environmental vetting in RETI 2.0.

San Bernardino County has repeatedly gone on record with the Energy Commission and the other REAT agencies as strongly opposing siting decisions that tend to follow when landscape level planning determines the decision.

Zoomed out data and under-refined analysis, coupled with a blind spot as to how large projects can affect local communities lead to bad siting decisions. And I think that's a fundamental point that the County has been trying to make, with no apparent response from the Energy Commission or the other REAT agencies.

IEPR, in my opinion, should be identifying and

remedying these flaws, rather than replicating and building on them. Terrestrial intactness maps should be the jumping off points and not the end points.

The IEPR process is, in my opinion, infected with the assumption, which again doesn't seem to undergo any real examination that the price we have to pay to meet our energy goals is habitat destruction caused by utility scale renewable energy.

I wish these points would be considered and addressed in an open, non-defensive way. I just have had difficulty hearing any real response to these things. Instead, we hear more and more about various processes and tools that are part of the landscape level process, but not a lot of comment or real examination about the utility and perhaps the limits on use of landscape level analysis, itself.

Thank you. I appreciate you listening to my comments.

MR. FLINT: Thank you.

Is that it?

Okay, I think that's the end of the public comment and thank you, folks, for those comments.

With that, if there are no other questions, I think we are closed for the day. Thank you for taking your time to participate in the workshop. And we got

you out to travel home just at the hottest part of the day. Sorry about that. Thank you.

And keep checking the website for upcoming work and notices on the progress of the tool. Thank you.

(Thereupon, the Workshop was adjourned at 2:59 p.m.)

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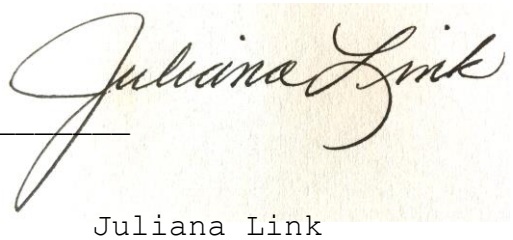

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