

LA100 EQUITY STRATEGIES



Los Angeles 100% Renewable Energy Equity Strategies

Steering Committee Meeting #11

September 21, 2022

Summary¹

Schedule and Location

Wednesday, September 21, 2022, 10:00 a.m. to 12:00 p.m.

Conducted virtually

Virtual Meeting #11 Attendees

Steering Committee Members

City of LA Climate Emergency Mobilization Office (CEMO), Marta Segura

City of LA Climate Emergency Mobilization Office (CEMO), Rebekah Guerra (alternate)

Climate Resolve, Jonathan Parfrey

Community Build, Inc., Robert Sausedo

DWP-NC MOU Oversight Committee, Tony Wilkinson

Enterprise Community Partners, Michael Claproth (alternate)

Esperanza Community Housing, Nancy Ibrahim

Los Angeles Alliance for a New Economy (LAANE), Kameron Hurt

Move LA, Eli Lipmen (alternate)

Pacific Asian Consortium in Employment (PACE), Celia Andrade

Pacoima Beautiful, Veronica Padilla

Pacoima Beautiful, Annakaren Ramirez (alternate)

RePower LA Coalition, Roselyn Tovar (alternate)

The South Los Angeles Transit Empowerment Zone (SLATE-Z), Stephanie Ramirez (alternate)

South LA Alliance of Neighborhood Councils, Thryeris Mason

Strategic Concepts in Organizing and Policy Education (SCOPE), Gina Charusombat (alternate)

LADWP Board of Commissioners

Cynthia McClain-Hill, Board President

¹ This summary is provided as an overview of the meeting and is not meant as an official record or transcript of everything presented or discussed. The summary was prepared to the best of the ability of the notetakers.

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LADWP Staff

Andrew Kwok
Armen Saiyan
Ashkan Nassiri
Ashley Negrete
Carol Tucker
Daniel Coffee
David Castro
David Rahimian
Dawn Cotterell
Iris Castillo
Jay Lim
Mudia Aimiuwu
Mukund Nair
Pjoy Chua
Ramon Gamez
Robert J. Meteau
Simon Zewdu
Steve Baule
Vanessa Gonzalez

Project Team

Eda Giray, National Renewable Energy Laboratory (NREL)
Garvin Heath, NREL
Kate Anderson, NREL
Megan Day, NREL
Nicole Rosner, NREL
Patricia Romero-Lankao, NREL
Sonja Berdahl, NREL
Cassie Rauser, UCLA
Yifang Zhu, UCLA
Christian Mendez, Kearns & West
Jasmine King, Kearns & West
Joan Isaacson, Kearns & West
Robin Gilliam, Kearns & West

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Welcome Remarks

Joan Isaacson, facilitator from Kearns & West, welcomed members to the eleventh Los Angeles 100% Renewable Energy Equity Strategies (LA100 Equity Strategies) Steering Committee meeting. She introduced Simon Zewdu, Director of the Transmission Planning, Regulatory, and Innovation Division, to provide opening remarks.

Simon Zewdu welcomed Steering Committee members to the meeting and noted that LADWP's power system had experienced an eventful last 25 days, including a wildfire around the Castaic Power Plant that resulted in power system impacts, followed by nine days of an extreme heat wave where the power system infrastructure was tested and stressed. Simon Zewdu shared that in the three days after the heat wave, a windstorm impacted numerous customers as well. He stated that the conversations on reliability, sustainability, and infrastructure improvement in LA100 Equity Strategies are all relevant to these recent events resulting from climate change.

Simon Zewdu highlighted that LADWP has been working on new initiatives and programs to address equity so that work can begin before LA100 Equity Strategies is completed. One program he shared is [Cool LA](#), an initiative designed to help LADWP customers better manage the impacts of extreme heat caused by climate change, especially for older adults, people in low-income neighborhoods, and those living in communities with a historic lack of program participation or availability of applicable programs to help them stay cool. He said LADWP will send out information to Steering Committee members to pass along to their communities. Finally, Simon Zewdu shared that there will be new LADWP programs to address equity in the days to come and LADWP will continue to share this information with the Steering Committee as it becomes available.

Meeting Purpose and Agenda Overview

Joan Isaacson reviewed the meeting agenda (see slide 3 in Appendix). She shared that Climate Resolve would provide an organization spotlight, Kearns & West would provide a summary of key themes from Steering Committee check-ins, LADWP would present on Equity Metrics, and the National Renewable Energy Laboratory (NREL) would present an update on the community meetings and the role of metrics in LA100 Equity Strategies. Joan Isaacson stated that NREL and UCLA would also provide an update on the air quality and health analysis.

Joan Isaacson noted the next meetings will focus on household energy modeling, shared solar siting, and the energy atlas. She reminded Steering Committee members of the guides for productive meetings and that ideas for agenda items are welcomed and can be sent to Dawn Cotterell at LADWP.

Steering Committee Check-in and Spotlight

Joan Isaacson invited Steering Committee members to respond to the question: In 10 words or fewer, what is your observation of the recent heat wave and energy use?

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Major Themes from Steering Committee Questions and Discussion

- **City of LA Climate Emergency Mobilization Office (CEMO)/Chief Heat Officer:** There is more coordination with cities and other agencies during extreme heat events. CEMO has been able to communicate and convey more information about cooling centers, and during the heat wave, 200,000 people used the cooling centers.
 - Please provide CEMO with feedback on their app and website. The Cool Spots LA app is on the Heat Relief Page of the website: www.climate4LA.org
- **Climate Resolve:** Governor Newsom's urgent text saved Los Angeles' bacon, shedding over 2,000 MW of energy use.
- **DWP-NC MOU Oversight Committee:** The heat brought back discussions about global warming and the health dangers of heat to low-income communities. For people who are older and/or have no air conditioning, the temperature inside homes reached over 100 degrees Fahrenheit. Marty Adams and LADWP did well with the quick implementation of a low-income cooling program. Emphasis on the importance of cool homes should be a part of the power equity discussions.
- **Enterprise Community Partners:** Scared to see electricity bills next month.
- **Esperanza Community Housing:** Devastation occurs with inequitable resources, and it is a frightening warning of challenges to the climate ahead.
- **LAANE:** It was painfully hot.
- **PACE:** It was horrible, but community members were able to get through it. There's a long way to go.
- **Pacoima Beautiful:** Guilt and concerns about using air conditioning in the home were felt amongst community members, especially when thinking about community members and children that didn't have access to air conditioning. Air conditioning was needed all day to maintain a safe and comfortable in-home temperature.
- **South LA Alliance of Neighborhood Councils:** It was miserable because of no access to central air conditioning in the home.
- **SCOPE:** An urge to conserve and fear of high bills were felt by community members.

Joan Isaacson invited Jonathan Parfrey, Executive Director of [Climate Resolve](#), to spotlight the organization. Jonathan Parfrey shared that Climate Resolve is part of the LA Cleantech Incubator. He shared that they were founded in 2010 and are best known for urban cooling advocacy and implementation projects with social equity at the heart of their work. Jonathan Parfrey stated that Climate Resolve believes in grassroots-informed projects that benefit communities directly, and they also advocate for public transportation, active transportation, and stopping sprawl.

Jonathan Parfrey described Climate Resolve's work with the Urban Sustainability Network to promote resilience hubs. He explained that resilience hubs address multiple hazards and are run by a community organization. Additionally, Jonathan Parfrey noted, resilience hubs can operate independently from the government and still receive government funding. He shared that Climate Resolve and the Urban Sustainability Network have been raising money for a microgrid at the Boyle Heights Resilience Hub to ensure people have access to water and power during strains on the grid. Jonathan Parfrey stated they



are also developing a resilience plan for the Baldwin Hills Parklands to provide urban parks as a resilience approach.

Jonathan Parfrey shared that Climate Resolve is active in implementing cool roofs in Los Angeles, such as assisting in the process of enacting [Cool Roof Ordinance 183149](#) in Los Angeles where 25% of steep slope roofs are required to use roofing material that reflects sunlight back into space. He stated that Climate Resolve is also working on cool pavement initiatives, such as upgraded pavements in Hubert Park in Pacoima. Additionally, Jonathan Parfrey noted, Climate Resolve recently gave a presentation to the White House Office of Science and Technology on bouncing sunlight back into space, which gets at the heart of the climate issue by removing greenhouse gas (GHG) effects and cooling communities.

Lastly, Jonathan Parfrey stated that Climate Resolve advocates at the state level on laws and regulations related to Climate Action and Adaptation plans, lawsuits, zero-emission transit, tree planting, public engagement on energy efficiency and water conservation, managing GHG mitigation projects, research assistance, and communications.

Report on Themes from Steering Committee Check-Ins

Joan Isaacson overviewed several key themes from check-ins with Steering Committee members (see slides 19-21 in Appendix). She stated that overall impressions of the Steering Committee process are positive, but some members shared that there could be opportunities for more substantive involvement. Joan Isaacson noted that some members expected materials to be more relevant and action-oriented, with a greater focus on historical challenges.

In terms of the overall process, she shared, numerous Steering Committee members felt that a process roadmap, more information on the outcomes of LA100 Equity Strategies, and more pre-read materials would be helpful. Additionally, she noted that some members felt certain voices dominated in conversations, and discussions felt repetitive.

Joan Isaacson explained that numerous members would consider attending in-person meetings on occasion, but virtual meetings can work better for scheduling. She then noted that the technical level has increased in meeting discussions, creating a barrier to participation for some members. Some member suggestions for improving the process included working in subgroups and greater follow-up from the project team after meetings.

Major Themes from Steering Committee Questions and Discussion

- The technical level of detail is critical as Steering Committee members try to get the message out to the public, but it needs to have less detail with key points better explained.

Where We Are in the Process

Megan Day, LA100 Equity Strategies Project Manager and NREL Senior Energy Planner, noted that LA100 Equity Strategies has passed the mid-point (see slides 22-25 in Appendix). She noted that community

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engagement has occurred and is ongoing, Steering Committee meetings have been occurring monthly, and Advisory Committee meetings occur every other month. She explained that the project team did not have an established plan before starting the process and that the LA100 Equity Strategies analysis plan was based on Steering Committee, Advisory Committee, and community input. Additionally, Megan Day stated that the project team developed data sources and assumptions based on that input to work towards preliminary results that will result in implementation-ready strategies.

From the recognition justice perspective, Megan Day shared that the project team has conducted interviews and a literature search, written a draft analysis of Los Angeles' current energy inequities, and made recommendations to increase equity in existing LADWP programs. She stated the project team plans to prepare a final report on Los Angeles' current energy inequities and finalize recommendations to increase equity.

To address procedural justice, Megan Day described how the project team has held meetings with the Steering and Advisory Committees, conducted six listening sessions with 10 more planned, and held two community meetings. She shared that remaining efforts include nine Steering Committee meetings, four Advisory Committee meetings, 10 listening sessions, and preparation of educational materials for community outreach.

Megan Day shared that from the distribution justice perspective, the project team has completed data sources and assumptions, methodologies, and proposed goals and metrics with the benefits and impacts in mind. She explained that NREL is now in the process of modeling equity strategies and drafting pathway recommendations. Megan Day stated that NREL has developed income-differentiated modeling (e.g., renters, multifamily homes) for targeted strategies.

Megan Day noted that looking ahead, the collective goal is to develop practical, implementation-ready strategies intended to increase energy equity outcomes on Los Angeles' road to 100% clean energy. She shared that the project team has identified community priorities such as affordability and burdens, access and use, health, safety and resilience, and jobs. Megan Day highlighted the project team's goal of understanding what strategies can increase bill stability and reduce energy burden. She reviewed several strategy development pathways including reducing energy burdens, universal home cooling, community solar, and others (see slide 25 in Appendix). Megan Day stated these pathways will result in a report that identifies strategies to achieve the most equitable outcomes. She explained that it will then be up to LADWP and other agencies to implement the strategies.

Major Themes from Steering Committee Questions and Discussion

- There are concerns about modeling the equity strategies when the elements and weighting of the model have not been discussed here in the Steering Committee.
- Has the Steering Committee become an implementation committee for an equity strategies plan designed by NREL?
- Is NREL also considering impacts on the grid to sustain the increase in electric vehicles (EVs) and electrification?

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- Megan Day: NREL is building on the LA100 Renewable Energy study. The project team is looking at ways to accommodate high levels of electrification by upgrading the grid. The LA100 Renewable Energy study went through this information in detail. NREL is now looking at how to do this equitably.
- Some members of the Steering Committee are very concerned about transportation electrification. However, LADWP power generation in-basin is a minuscule contributor to air quality problems compared with transportation. It does not make sense why LADWP ratepayers should be funding transportation greening when the LA100 Renewable Energy study is about greening power generation.

LADWP Equity, Diversity, and Inclusion Overview

Robert J. Meteau, Assistant General Manager and Deputy Chief Diversity, Equity & Inclusion Officer at LADWP, provided background information on LADWP's Office of Diversity, Equity & Inclusion (DEI). He shared that the DEI office was created in 2021 as part of LADWP's [Racial Equity Action Plan](#) to respond to matters on diversity, equity, and inclusion. In regard to equity, Robert J. Meteau stated that the office has established Equity Metrics through the [Equity Metrics Data Initiative](#). He explained that the DEI office was formed in part to implement the Racial Equity Action Plan and develop a gender equity initiative.

Robert J. Meteau then described the DEI office's cultural management plan – folded into the larger DEI strategic plan – which looks at the culture of LADWP. He stated that the DEI office is examining power and electricity impacts to customers and looking at both missing metrics and those previously identified. He shared that the initial Equity Metrics were created in 2019 and re-prioritized in 2022 by the LADWP Board of Commissioners to meet community goals.

At LADWP, Robert J. Meteau highlighted that the LADWP Board of Commissioners is comprised entirely of women, and the Board President and Vice President are both women of color. He noted that LADWP is working to be transformative and meet the needs of the public. He also shared current challenges, such as developing staff and focusing on outcomes. Regarding future LADWP programs and services, he explained that the DEI office will handle oversight of all the Equity Metrics. Robert J. Meteau stated that staff in the DEI office are excited about the future and are looking forward to assisting with the measurement and analysis of the Equity Metrics.

Andrew Kwok, Assistant Diversity, Equity & Inclusion Officer at LADWP, shared additional information on the DEI office. He stated that the DEI office is a community center that can lead to many transformative efforts and can support LA100 Equity Strategies along with other projects. Andrew Kwok emphasized the role of the DEI office in ensuring that diversity, equity, and inclusion are part of the DNA of LADWP. He explained that the DEI office is working to achieve this through four focus areas: workforce development, supplier diversity, economic development, and community engagement. Andrew Kwok noted that he would only be overseeing the workforce development, supplier diversity, and community engagement focus areas.

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Andrew Kwok overviewed the workforce development focus area, stating that LADWP is committed to investing in employees and addressing challenges related to the workforce in communities. He then shared that it is essential to identify needed skills and capabilities and develop programs and professional development to foster these skills. Andrew Kwok noted that the DEI office aspires to partner with community-based organizations (CBOs) that focus on workforce development, and that they are developing internal systems to be able to partner with CBOs. He shared that there will be a hot market for clean energy, but that workforce development must be considered through the lens of equity.

The supplier diversity focus area, Andrew Kwok explained, is centered on local businesses and re-thinking how to design technical assistance programs. He shared that the DEI office is receiving input that doing business with LADWP comes with challenges. To address this input, Andrew Kwok explained that LADWP plans to streamline processes to improve partnerships with local businesses. He stated that supplier diversity supports job creation and system-level changes that eliminate barriers for communities.

Next, Andrew Kwok overviewed the community engagement focus area with an emphasis on cultivating a culture of diversity, equity, and inclusion. He shared that the DEI office would begin developing employee resource groups to cultivate a sense of belonging and community at LADWP.

Andrew Kwok explained that the Equity Metrics, the cornerstone of the DEI strategy, measure how LADWP is doing in terms of equity and where improvements can be made. He noted that part of this effort includes engaging CBO partners and ensuring the Equity Metrics work for all stakeholders involved. Andrew Kwok stated the DEI office intends to work with the LA100 Equity Strategies Steering Committee to collect feedback and input on the Equity Metrics.

Mudia Aimiuwu, Data Analyst in LADWP's DEI office, overviewed the Equity Metrics Data Initiative. He explained that the Equity Metrics Data Initiative includes four core categories: water and power infrastructure investment, customer incentive programs/services, procurement, and employment. He then shared the metrics within each core category (see slide 28 in Appendix), such as water quality complaints, Low Income and Lifeline Programs, LADWP Small Business Enterprise (SBE) and Disabled Veteran Business Enterprise (DVBE) programs, and new hire and promotion demographics.

Currently, Mudia Aimiuwu explained, the Equity Metrics Data Initiative is now housed in the DEI office and they are currently working to identify goals and policies for each metric and how to track progress. He shared that the current focus is to engage disadvantaged communities (DACs) and stakeholders through workshops to solicit input and increase information exchange. Mudia Aimiuwu stated the DEI office plans to present its findings and recommendations to the LADWP Board of Commissioners in the coming months. Andrew Kwok shared that the DEI office is looking forward to developing the Equity Metrics Data Initiative.

Major Themes from Steering Committee Questions and Discussion

- Are there any Latinos on your team in Leadership positions?



- Robert J. Meteau: Yes, there is a Latino staff member on the management team.
- It's great news to see the review of the current Equity Metrics. Commissioner Bill Funderburk, a champion of the Equity Metrics, always said they were a starting set that would need to be reviewed for relevance and utility over time.
- The City of Los Angeles is creating an [Equity Index](#) and will now include climate, environment, and health, which will help to track and monitor progress.
- One of the challenges in supplier diversity is the expansion of the definition of who is covered. Numerically, the number of groups who are included in this group is rapidly exceeding the much smaller group of people for whom the preferences were originally designed to serve and redress for prior exclusions.
- Comprehensive Affordable Multifamily Retrofits and the Cool LA data would be great to include in this effort. It would be great to see CAMR track costs and funding sources that work, along with best practices.

Community Listening Sessions Update

Patricia Romero-Lankao, LA100 Equity Strategies Technical Lead from NREL, shared that the main goal of LA100 Equity Strategies is to help ensure a just and equitable clean energy transition and the listening sessions are to understand the priorities and needs of community members. In the first round of listening sessions, she stated, NREL asked five small groups of Angelenos what energy justice means to them, including their vision for a just energy future in their community, understandings of factors influencing energy inequities in their community, and suggested energy strategies to redress these inequities.

In the second round of listening sessions, Patricia Romero-Lankao explained, the aim is to understand how to rectify the challenges shared in the first round and achieve the energy equity goals outlined by community members. The project team seeks to continue the community feedback loop by co-developing content with communities and creating a collaborative space where participants can workshop the understanding of past feedback.

Looking forward, Patricia Romero-Lankao shared that 10 in-person listening sessions are scheduled over the next few months in the San Fernando Valley, South Los Angeles, East Los Angeles, and Harbor communities. She stated that NREL welcomes feedback from the Steering Committee on the listening sessions. Simon Zewdu emphasized the focus of the listening sessions to be intimate and informative for community members. Additionally, Steering Committee members were reminded that Dawn Cotterell is the main contact on this community listening sessions effort, and feedback can be shared with her at dawn.cotterell@ladwp.com.

Major Themes from Steering Committee Questions and Discussion

- Are you still looking for South Central LA CBO partners?
- Who is the project team working with on these listening sessions? Is the group involved in the listening sessions part of the larger LA100 Equity Strategies Steering Committee?



Air Quality and Health: Feedback on Medium- and Heavy-Duty Vehicle Emissions Impact Modeling

Garvin Heath, Senior Environmental Scientist and Energy Analyst with NREL, provided an update on the modeling for medium- and heavy-duty vehicle emissions impacts. As a reminder, he stated that NREL and UCLA aim to answer where electrification of which types of vehicles (light-, medium-, and heavy-duty) would provide the greatest health benefits in DACs, and whether vehicle electrification will provide greater air quality and health improvements in DACs. He explained that the answers to the research questions can inform electrification incentives and program targeting, as well as infrastructure investment locations and sequencing.

Steering Committee guidance has been considered regarding which areas and roads to prioritize in the modeling, Garvin Heath noted. He described the overall approach where UCLA is conducting a broader, regional approach for Los Angeles with a zero-emission vehicle disparity scenario and a zero-emission vehicle equity scenario on light-duty and light-, medium-, and heavy-duty vehicles, whereas NREL is focusing on medium- and heavy-duty vehicle classes at different electrification levels across a wide range for both UCLA scenarios in different Los Angeles neighborhoods.

UCLA and NREL researchers will be assessing health by race and ethnicity, explained Garvin Heath, and they will look at mortality and monetized health benefits at a community level. He noted that this analysis will be compared to prior LA100 Renewable Energy Study results. Garvin Heath shared that today the project team would discuss which DAC census tracts to use for sampling and analysis, provide an update on traffic activity and emissions rates, describe air quality modeling and equity analysis methods, and provide an update from UCLA on electric vehicle miles traveled (EVMT) and emissions projections.

Traffic Air Quality Focused DACs

Garvin Heath reviewed the current set of indicators used in CalEnviroScreen 4.0, which focuses on pollution burden and population characteristics (see slide 38 in Appendix). He explained that in looking at these indicators NREL asks how to select which ones to analyze for traffic-related, air quality-specific benefits. For the analysis, Garvin Heath shared, NREL plans to include traffic impacts and diesel particulate matter emissions and also asks the question of whether including other indicators benefits the analysis.

Garvin Heath overviewed NREL's process to identify tracts most affected by traffic air pollution (see slides 40-42 in Appendix), which includes identifying indicators, modeling with the CalEnviroScreen methodology, analyzing census tracts, and selecting the combination that yields the highest median CalEnviroScreen percentile score.

To summarize, Garvin Heath explained that NREL modeled by using two fixed indicators and five varied indicators and that the analysis identified the highest CalEnviroScreen score. NREL overlaid that analysis with the DAC tracts, which indicated a subset of tracts highly affected by traffic and air quality. The tracts for analysis and sampling were then highlighted by Garvin Heath, and he noted that they take into



consideration the communities identified by Steering Committee members in previous meetings. He asked Steering Committee members to consider if this approach to identifying the most-impacted census tracts makes sense.

Major Themes from Steering Committee Questions and Discussion

- The lack of dark color in the map areas around the ports with truck concerns is surprising.
 - Garvin Heath: There are high traffic and air quality impacts for the ports, but they don't rank as high in CalEnviroScreen. Port communities don't map as high in the TAQ (Traffic Air Quality)-DAC focus.
- CalEnviroScreen does not identify any port census tracts as impacted, but there are many low-income people residing in the area. This questions the utility of the CalEnviroScreen as the only way to determine target communities.
- Could the map be shown in greater detail?
- The methodology seems clear, but it should be corroborated with ground truthing methods with local CBOs.

NREL Updates

Garvin Heath explained that NREL will use vehicle activity projection data based on the UCLA Mobility Lab's travel demand modeling to analyze traffic impacts. He overviewed how the project team will model emission rates and that they will be based on the most recent version of the California Air Resources Board's (CARB) EMFAC (EMission FACTor) model. Importantly, emission rates depend on factors such as vehicle type, fuel type, and speed, and all factors are included in UCLA's emissions model.

The research team will test a wide range of potential electrification proportions that will factor into projected emissions rates and air quality projections, which will then go through a health impacts assessment, Garvin Heath explained. He then noted that the project team will put each of the analyses together to conduct an environmental justice analysis. Lastly, Garvin Heath stated, CalEnviroScreen is a state-verified tool that will be used for the analysis.

UCLA Updates

Yifang Zhu, Professor of Environmental Health Sciences at UCLA, provided updates from UCLA's analysis. She reviewed two maps on zero-emission vehicle (ZEV) percentages (see slide 50 in Appendix) for 2017 and 2035 and explained that the modeling uses a logistics growth model to show projected ZEV adoption rates and that it will be mapped across all census tracts. In 2035, ZEV growth will increase substantially, emphasizing the color contrasts on the maps that show the disparity of ZEV ownership across Los Angeles communities where non-DAC residents have much higher ownership rates than DAC residents.

Yifang Zhu presented the integrated transportation model and shared that it was developed by the UCLA Mobility Lab to simulate vehicle movement in a multimodal network with a congestion impact,



which incorporates all vehicle types (e.g., passenger cars; light-, medium-, heavy-duty trucks; transit vehicles). She described how the map colors represent vehicle speed where red indicates slower speeds and green higher speeds. Yifang Zhu explained that this model allows the project team to predict different types of vehicle miles traveled (VMT) for different vehicle types over a period, which ultimately enables them to track the VMT for each census tract.

In comparing the two maps of ZEV ownership and VMT, Yifang Zhu stated, the electrification of vehicles can reduce emissions in both DACs and non-DACs, but disparities exist due to adoption rates. She noted that UCLA will model different scenarios to address to what extent an equitable transition can bring additional health benefits to DACs. Yifang Zhu overviewed the three scenarios: a disparity scenario (no changes to help with EV adoption rates), removal of barriers to make the EV transition more equitable, and electrification of medium- and heavy-duty vehicles. Lastly, she explained that EVs can offset emissions due to economic growth in the future and that these changes will be included in an atmospheric model to identify health impacts.

Major Themes from Steering Committee Questions and Discussion

- It is important to understand the difference between this wonderful in-depth look at the transportation sector and equity and equity directly related to the power system. The City of Los Angeles has made LADWP the lead agency in efforts to address greening transportation, and LADWP should be or will be using its power revenues to fund the transportation equity elements (other than items like EV charging that are directly related to its power system).
- The data seem logical, but there also seems to be a problem. ZEVs track income levels, but traffic impacts are in low-income communities.
- There seems to be a high reliance on EV car adoption. How much is the expansion of public transportation considered in these studies that model emissions in miles traveled?
 - Yifang Zhu: Transit is a small percentage of emissions in the whole transportation mobile sources of emissions, but it is factored into the scenario development. Transit and buses are included in the modeling.
 - Simon Zewdu: Metro will electrify the bus fleet by 2028. Many transit agencies have electrification policies in place, and contribution to GHG emissions will be minimal.
- The concurrent housing crisis is heightening concerns of rapidly shifting gentrification and displacement on DACs. It will be necessary to see modeling that reflects displacement and gentrification effects.
- Cynthia McClain-Hill, Los Angeles Board of Water and Power Commissioners, Board President: It is important to amplify the comment regarding the intersection of economic issues and the degree to which they weigh on the future. The question regarding mass transit may also be talking about taking cars off the road. Does the model incorporate assumptions about public transit and car travel in the future?
- Cynthia McClain-Hill, Los Angeles Board of Water and Power Commissioners, Board President: CalEnviroScreen is noted as the basis for modeling. This was pointed out as a constraint in the LA100 study. There needs to be an additional lens as the team seeks to understand how to get to equity in a dynamic environment and weighs the need for data set certainty and additional measures to consider the dynamic change that communities are experiencing.

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LADWP's Next Steps

Simon Zewdu stated that LA100 Equity Strategies is a continuation of the LA100 Renewable Energy study, highlighting that equity was not considered in the original study. He shared that LADWP has also been developing the Strategic Long-Term Resource Plan (SLTRP), ensuring LA100 Equity Strategies is well-aligned with the SLTRP process, and noting the many opportunities and challenges to come. LADWP will need to identify ways to overcome and mitigate those challenges to understand how to implement LA100 Equity Strategies, he emphasized. Lastly, Simon Zewdu shared that LADWP and the LA100 Equity Strategies project team will be working with the LADWP DEI office on the Equity Metrics Data Initiative in the coming months.

Major Themes from Steering Committee Questions and Discussion

- Will the elements and the priorities of LA100 Equity Strategies already be set? What if the Steering Committee has differences with the emphasis?

Wrap Up and Next Steps

Joan Isaacson stated that the next Steering Committee meeting will take place on October 19, 2022, and that subsequent meetings will occur monthly on the third Wednesday of each month from 10:00 am – 12:00 pm. She also explained that agenda items will include the household energy modeling approach, shared solar siting analysis, and the Energy Atlas. Joan Isaacson thanked Steering Committee members for their time and continued participation in the meetings.

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Appendix

Steering Committee Meeting #11

September 21, 2022

Presentation Slides



LA100 EQUITY STRATEGIES

**LA100 Equity Strategies
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UCLA

Los Angeles Department of Water & Power (LADWP)

Project Leads



Simon Zewdu

Director

Transmission Planning,
Regulatory, and Innovation Division



Pjoy T. Chua, P.E.

Assistant Director

Transmission Planning, Regulatory,
and Innovation Division



Steve Baule

Utility Administrator

LA100 Equity Strategies Oversight
& UCLA Contract Administrator



Stephanie Spicer

Community Affairs Manager



Agenda

Start Time	Item
10:00 a.m.	Welcome
10:05 a.m.	Meeting Purpose and Agenda Overview
10:10 a.m.	Steering Committee Check In and Spotlight: Climate Resolve
10:30 a.m.	Report on Themes from Steering Committee Check Ins
10:40 a.m.	LADWP Equity, Diversity and Inclusion Overview
11:10 a.m.	Community Listening Sessions Update
11:20 a.m.	Air Quality and Health: Update on Medium- and Heavy-Duty Vehicle Emissions Impact Modeling
11:50 a.m.	How LADWP Will Use the Output Metrics
11:55 a.m.	Wrap Up and Next Steps



Our Guide for Productive Meetings



Raise your hand
to join the
conversation
(less chat
entries, more
talking)



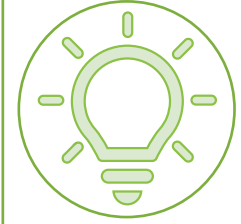
Help to make
sure that
everyone has
equal time to
contribute



Keep input
concise and
focused so that
others have
time to
participate



Actively listen to
others to
understand their
perspectives



Offer ideas to
address others'
questions and
concerns



Steering Committee Roster

Organization	Representative
Alliance of River Communities (ARC)	Vincent Montalvo
City of LA Climate Emergency Mobilization Office (CEMO)	Marta Segura, Rebecca Guerra
Climate Resolve	Jonathan Parfrey, Bryn Lindblad
Community Build, Inc.	Robert Sausedo
DWP-NC MOU Oversight Committee	Tony Wilkinson, Jack Humphreville
Enterprise Community Partners	Jimar Wilson, Michael Claproth
Esperanza Community Housing Corporation	Nancy Halpern Ibrahim
Los Angeles Alliance for a New Economy (LAANE)	Kameron Hurt, Estuardo Mazariegos
Move LA	Denny Zane, Eli Lipmen
Pacific Asian Consortium in Employment (PACE)	Celia Andrade, Susan Apeles
Pacoima Beautiful	Veronica Padilla Campos, Melisa Walk
RePower LA	Michele Hasson, Roselyn Tovar
The South Los Angeles Transit Empowerment Zone (SLATE-Z)	Zahirah Mann, April Sandifer
South LA Alliance of Neighborhood Councils	Thryeris Mason
Strategic Concepts in Organizing and Policy Education (SCOPE)	Agustín Cabrera, Tiffany Wong



Including Future Agenda Items

Tentative Schedule

This Meeting

Project Metrics

- Steering Committee member check-in, spotlight, and conversation summary
- LADWP diversity, equity, & inclusion
- Listening session update
- Air quality and health

October 19, 2022

- Steering Committee member check-in
- Household energy modeling approach
- Shared solar siting
- Energy Atlas

Future Meetings

- Transportation EV and charging infrastructure
- Rate analysis and affordability
- Workforce development
- Reliability and resilience
- Listening sessions

Check-in:

In 10 words or less, what is your observation of the recent heat wave and energy use?



Steering Committee Members Spotlight


Climate Resolve





Climate Resolve

LA100 Equity Strategies
September 21, 2022



**Social Equity is at the heart of our work.
Everything we do is viewed with a social
justice / equity lens.**

- **Founded in 2010**
- **Staff of 25**
- **Offices at LA Cleantech Incubator**

Best known for:

- **Urban cooling advocacy and implementation projects**
- **Inclusive project development**
- **Public transportation advocacy**
- **Stopping sprawl**
- **Ambitious — as in taking risks for good things**

Resilience Hub at the Boyle Heights Arts Conservatory



SPECTRUM NEWS 1

HEAT RESILIENCY HUB IN BOYLE HEIGHTS

00:25

05:25



SEASON

SPECTRUMNEWS1.COM

DEPORTATION FEARS GROW AFTER TEXAS JUDGE UNDO'S PI



Resilience Plan for Baldwin Hills Parklands



Resilience Plan for Baldwin Hills Parklands



Cool Roofs



Cool Streets



Cool Streets



PRE



POST

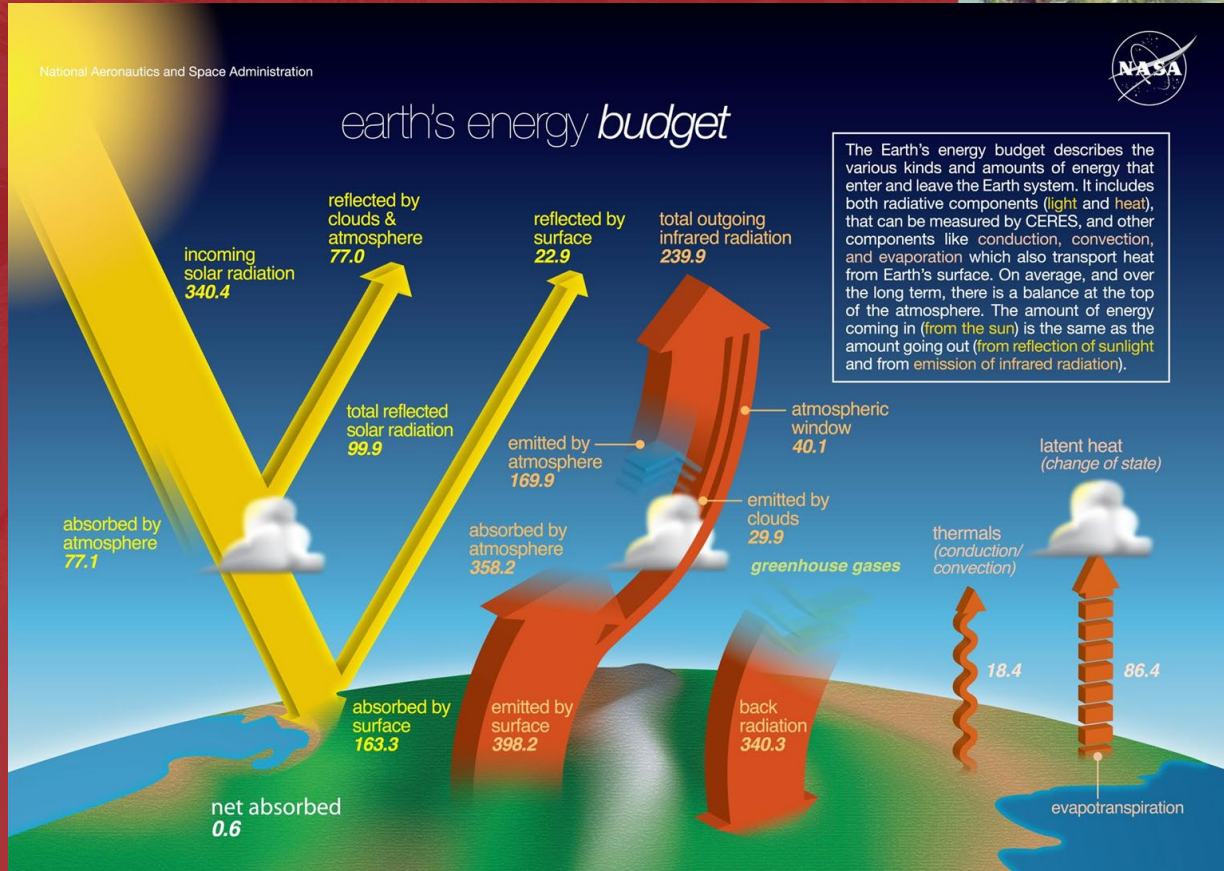
Bouncing Sunlight Back into Space

National Aeronautics and Space Administration



earth's energy *budget*

The Earth's energy budget describes the various kinds and amounts of energy that enter and leave the Earth system. It includes both radiative components (light and heat), that can be measured by CERES, and other components like conduction, convection, and evaporation which also transport heat from Earth's surface. On average, and over the long term, there is a balance at the top of the atmosphere. The amount of energy coming in (from the sun) is the same as the amount going out (from reflection of sunlight and from emission of infrared radiation).



All values are fluxes in Wm^2

Leah et al., J. Clim., 2009

Loads more:

- **Advocate on state laws & regs**
- **Climate Action & Adaptation Plans**
- **Lawsuits: HDC & Tejon**
- **Zero emission transit to Dodger Stadium**
- **Tree planting**
- **Public engagement on energy efficiency & water conservation**
- **Manage GHG mitigation projects**
- **Research assistance**
- **Communications**



Report on Themes from Steering Committee Member Check-Ins

Joan Isaacson, Facilitator, Kearns & West



Major Themes from Check-Ins with Steering Committee Members

- **Overall Impressions of Steering Committee Process**
 - General positive feedback
 - Opportunities for more substantive involvement
- **Expectations**
 - Relevant
 - Action vs information
 - More focus on existing challenges
- **Process**
 - Process roadmap and more info on outcomes needed
 - Overrepresentation of dominant voices
 - Subgroups suggestion
 - Repetitive discussions sometimes
 - Meeting lengths ok
 - More pre-read materials
 - Meeting follow-up



Major Themes from Check-Ins with Steering Committee Members

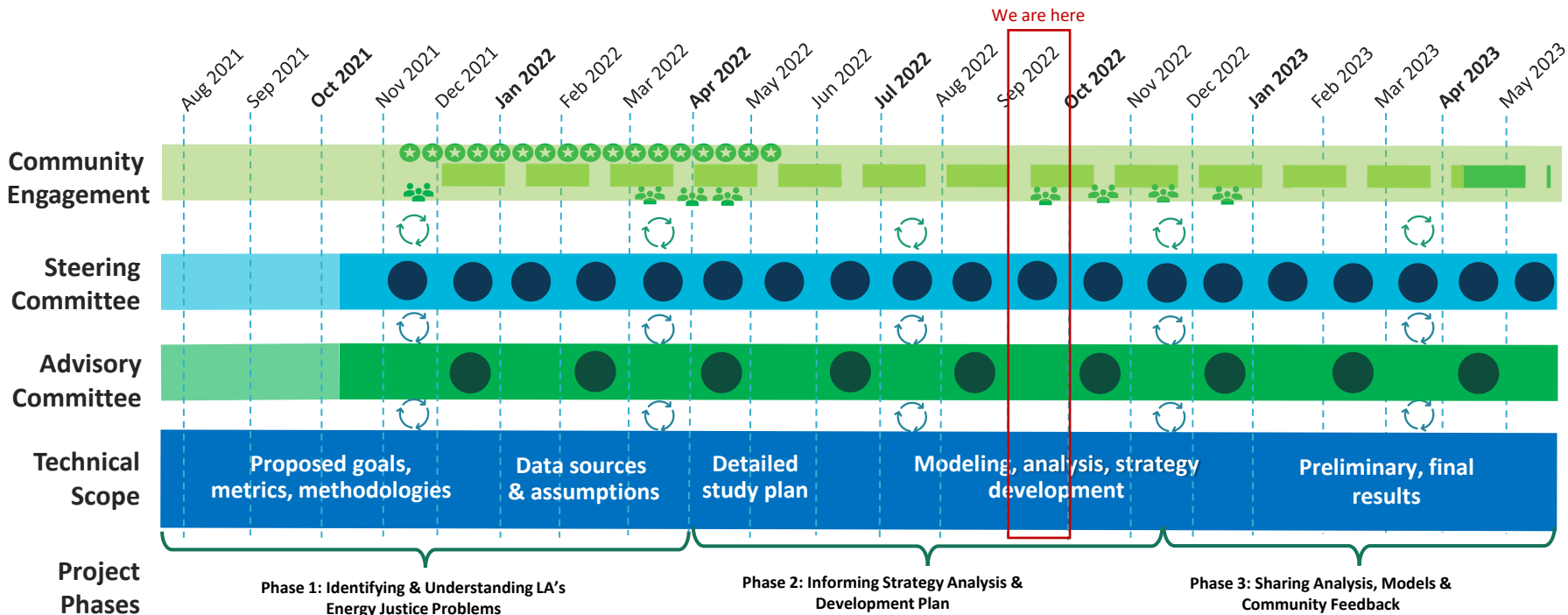
- **Meeting Format**
 - Breakout rooms are productive
 - More discussion and co-creation
 - More participation tools
 - Need set of community agreements
 - Mix in in-person/hybrid meetings
- **Technical Level of Meeting Discussions**
 - Becoming increasingly technical
 - Technical level can create barriers to participation
 - Unpack technical info more



Where are we in the process?

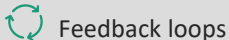


LA100 EQUITY STRATEGIES: TIMELINE & FRAMEWORK



Legend

Key connections



Engagement

- Community Engagement
- Steering Committee
- Advisory Committee

Digital Engagement Phases

- LA100 ES Digital Engagement
- Post-LA100 ES Engagement

Meetings

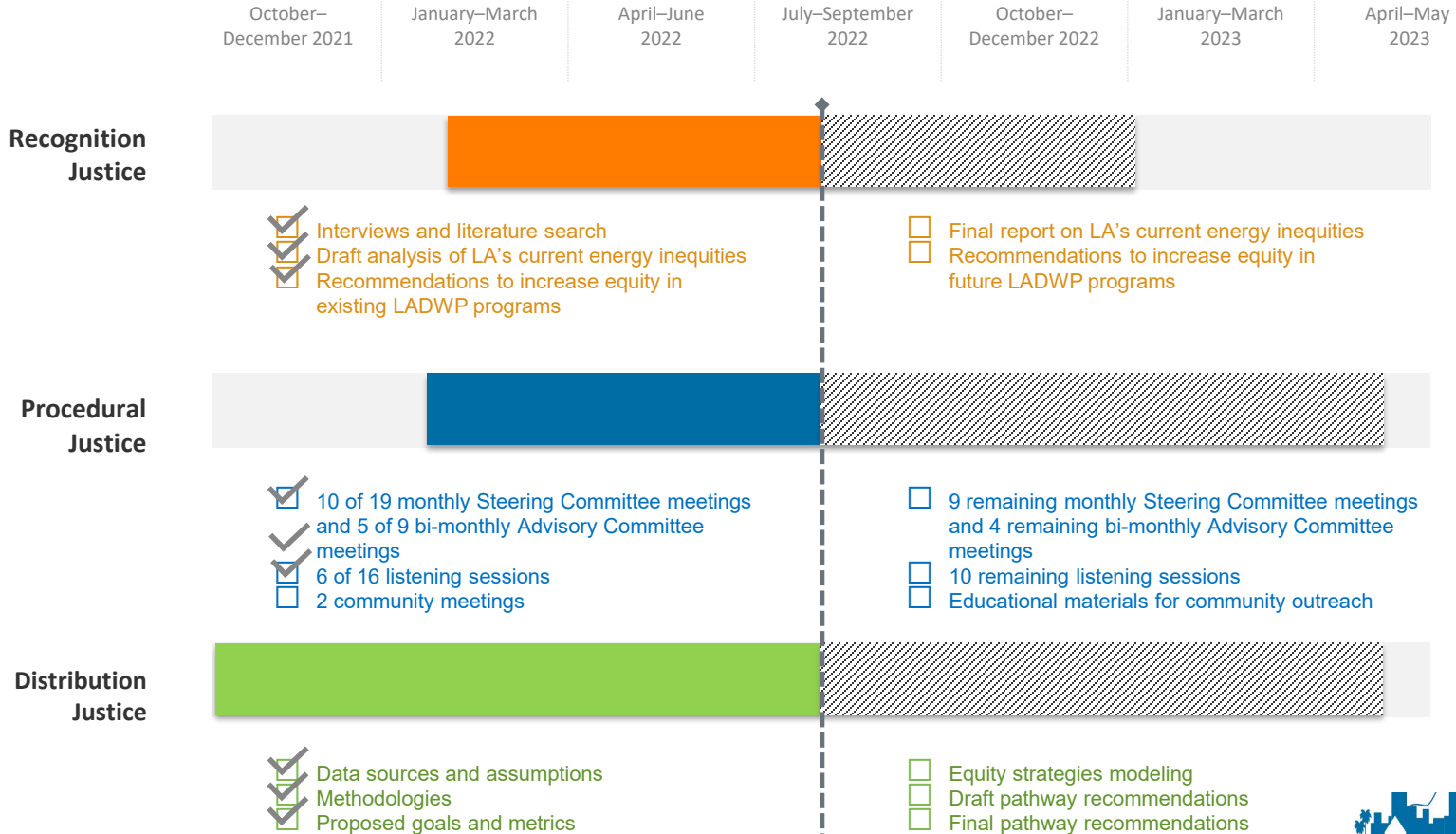
- Steering Committee
- Advisory Committee

Interviews

- One on One
- Listening Sessions

LA100 Equity Strategies Progress Dashboard

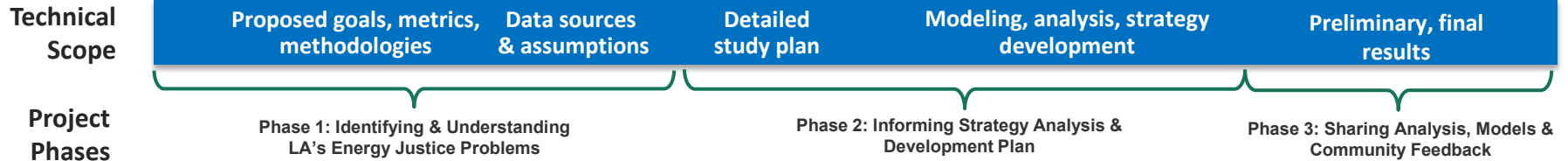
What Has Been Done and Where Are We Today?



LA100 Equity Strategies: Where Are We Going?

Developing Energy Justice Strategies

LA100 Equity Strategies will co-develop practical, implementation-ready strategies intended to increase energy equity outcomes on LA's road to 100% clean energy.



Community Priorities



Affordability & Burdens



Access & Use



Health, Safety, & Resilience



Jobs

Strategy Development Pathways

- Energy bill stability
- Energy burdens
- Universal home cooling
- Solar, storage, energy efficiency (multifamily, renter-occupied buildings)
- Community solar
- Light-duty electric vehicles & charging
- Mitigation of heavier-duty vehicle health impacts
- Building weatherization and resilience
- Resilience through solar-plus-storage siting
- Support electric reliability through distribution grid upgrades
- Clean energy jobs and workforce development

Topics

- Rates and affordability
- Buildings
- Local solar & storage
- Transportation
- Reliability and resilience
- Air quality and health
- Jobs and workforce development



LADWP Diversity, Equity and Inclusion Overview

Robert Meteau, Andrew Kwok, Mudia Aimiwu,
LADWP



LADWP Leadership



Robert J. Meteau
Deputy Chief
Diversity, Equity & Inclusion Officer



Andrew Kwok
Assistant
Diversity, Equity & Inclusion Officer



Mudia Aimiuwu
Data Analyst
Diversity, Equity & Inclusion Office



Equity Metrics Data Initiative

Equity Core Category	Metrics
Water & Power Infrastructure Investment	<ol style="list-style-type: none"> 1. Water Quality Complaints 2. Water System Probability of Failure & Planned Replacements 3. System Average Interruption Frequency Index (SAIFI) & System Average Interruption Duration Index (SAIDI) 4. Power System Reliability Program (PSRP) – Pole, Transformer, Cable Replacements
Customer Incentive Programs/Services	<ol style="list-style-type: none"> 5. Rain Barrel/Cistern/Water Tank Rebates 6. Turf Removal Rebates 7. Tree Canopy Program 8. Commercial Direct Install Program 9. Home Energy Improvement Program 10. Refrigerator Exchange Program 11. Consumer Rebate Program 12. Electric Vehicle Infrastructure 13. Low Income & Lifeline Programs
Procurement	<ol style="list-style-type: none"> 14. LADWP SBE/DVBE Program
Employment	<ol style="list-style-type: none"> 15. New Hire/Promotion Demographics



Community Listening Sessions Update

Paty Romero-Lankao, NREL



From the *What* to the *How*

Listening Sessions: Spaces of Collaboration with Community Participants

The What

First Round :

We asked five small groups of Angelenos **what energy justice means to them**, including their:

- (1) **vision** for a just energy future in their community;
- (2) **understandings** of factors influencing energy inequities in their community; and
- (3) **suggested energy strategies** to redress these inequities.

The How

Second Round :

The next 10 listening sessions aim to **understand how to:**

- (1) **rectify** the challenges shared in our last sessions and
- (2) **achieve the energy equity goals** community members have outlined.



Listening Sessions

Space of Collaboration

Continuing the Community Feedback Loop

- Content co-development
- Recruitment (8-10 local residents will participate each community-specific session)
- In-Person Hosting

Partnering with SC Members to Co-Develop each Session

- Continue our feedback loop with community members
- Create a collaborative space where participants can workshop our understanding of past feedback



Listening Sessions

Round Two

10 In-Person Listening Sessions

- Two sessions in September 2022
 - Communities of Focus: San Fernando Valley, South LA #1
- Three sessions in October 2022
 - Communities of Focus: South LA #2, East LA, Harbor
- Three Sessions in November 2022
 - Communities of Focus: South LA #1, South LA #2, San Fernando Valley
- Two Sessions in December 2022
 - Communities of Focus: East LA, Harbor



Air Quality and Health

Update on medium- and heavy-duty vehicle emissions impact modeling and output metrics

Garvin Heath, NREL

Yifang Zhu, UCLA



Air Quality & Health Modeling Overview

Questions to Be Answered with NREL and UCLA collaboration:

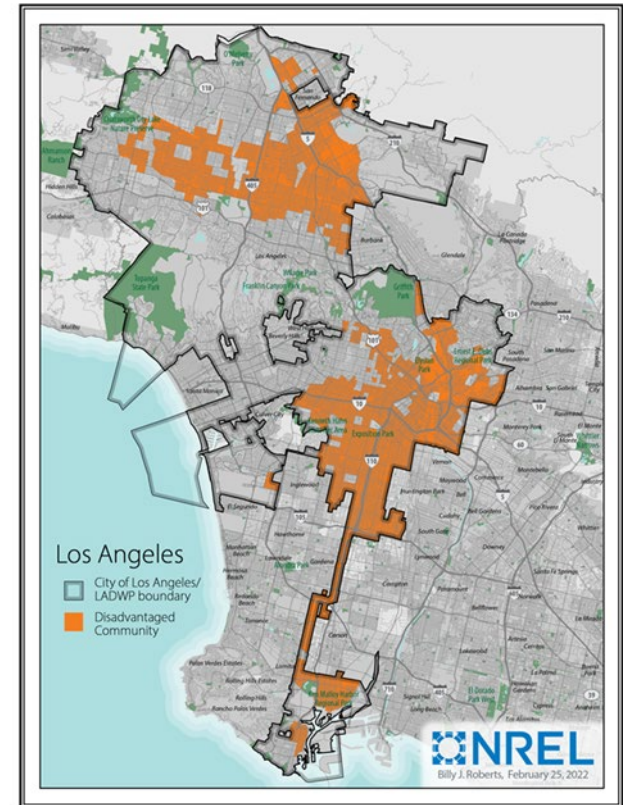
- Electrification of *which types of vehicles (light-, medium-, and heavy-duty)* and *where* would provide the greatest health benefits in disadvantaged communities?
- Will *vehicle electrification* provide greater air quality and health improvements in disadvantaged communities?

Outcomes:

- Answers will inform vehicle electrification incentives and program targeting, and infrastructure investment locations and sequencing.

Steering Committee Guidance:

- Which neighborhoods and roads should be prioritized?
 - Feedback from Steering Committee meeting #5: major freeways, Ports/LAX corridors, Wilmington, Pacoima, South LA



Air Quality & Health Modeling Overview

UCLA Scenarios

- Zero-Emission Vehicle disparity scenario
- Zero-Emission Vehicle equity scenario
 - Light-duty
 - Light-, medium-, & heavy-duty



Air Quality Modeling

- Model ambient PM_{2.5} and O₃ in 2035 using WRF-Chem (high resolution of about 1 km by 1 km)



NREL Scenarios

- UCLA-developed scenarios
- Medium- and heavy-duty vehicle classes at different electrification levels across a wide range
- Each scenario in many different LA neighborhoods,



Air Quality Modeling

- Near-roadway air quality model (<100 m spatial resolution)



Health Assessment

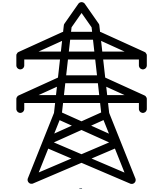
- Racial/ethnic specific baseline mortality rates
- Mortality due to PM_{2.5}, due to O₃
- Monetized health benefits at a community level



Goal of today's presentation

Discuss:

- Which disadvantaged community (DAC) census tracts to use for sampling and analysis
 - Some DAC tracts are affected by traffic related pollution more than others
 - Develop a “Traffic-Air Quality DAC” (TAQ-DAC) definition based on subset of CalEnviroScreen indicators and Steering Committee feedback
- NREL update
 - Traffic activity and emission rates in the modeling year (2035)
 - Air quality modeling and equity analysis methods
- UCLA update
 - Electric Vehicle Miles Travelled (eVMT) in 2035
 - Emissions projection in 2035



Traffic-Air Quality Disadvantaged Communities (TAQ-DAC)



Current set of indicators used in CalEnviroScreen 4.0 or its derivatives

Pollution Burden		Population Characteristics	
Exposure	<ul style="list-style-type: none"> • Ozone and particulate matter (PM_{2.5}) concentration • Diesel particulate matter (PM) emissions • Drinking water contamination • Children's lead risk from housing • Pesticide use • Toxic release from facilities • Traffic impacts 	Sensitive population	<ul style="list-style-type: none"> • Asthma emergency department visits • Cardiovascular disease • Low birth-weight infants
Environmental effects	<ul style="list-style-type: none"> • Cleanup sites • Groundwater threats • Hazardous waste • Impaired water bodies • Solid waste sites and facilities 	Socioeconomic factors	<ul style="list-style-type: none"> • Educational attainment • Housing-burdened low-income households • Linguistic isolation • Poverty • Unemployment

Only some indicators (marked here in red) are traffic related



Which DAC tracts are more affected by traffic-related air pollution?

Pollution Burden		Population Characteristics	
Exposure	<ul style="list-style-type: none">• Ozone concentration• PM_{2.5} concentration• Diesel PM emissions• Traffic impacts	Sensitive population	<ul style="list-style-type: none">• Asthma emergency department visits• Cardiovascular disease• Low birth-weight infants

- How do we select which of these indicators to analyze for traffic-related air quality-specific benefits?
- Two obvious choices: “traffic impacts” and “diesel PM emissions”
- Does including other indicators provide more insight?



How do we identify tracts most affected by traffic air pollution? (1)

IDENTIFY

- Consider all traffic/air quality-related indicators in CalEnviroScreen (7)
- Fix two indicators
 - traffic impacts
 - diesel PM emissions
- Combine with other *population* and *pollution* indicators in all combinations

MODEL

- Using CalEnviroScreen 4.0 methodology, calculate score for each tract in California
- Derive a traffic/AQ-affected disadvantaged community classification for each combination

ANALYZE and SELECT

- Analyze tracts (intersecting with CalEnviroScreen 4.0) for all 32 combinations for their scores
- **Select the combination that yields highest median CalEnviroScreen percentile score**



How do we identify tracts most affected by traffic air pollution? (2)

Fixed Indicators

- Traffic impacts
- Diesel particulate matter emissions

Varied Indicators

- Ozone (O₃) concentration
- PM_{2.5} concentration
- Asthma emergency department visits
- Cardiovascular disease
- Low birth-weight infants

Analyze each combination

Indicator combination	Total tracts with percentile >75 Tracts	Tracts common w/CalEnviro Screen
Traffic, Diesel	486	260
.....
Traffic, Diesel, PM _{2.5} , O ₃	705	397
.....
.....
Traffic, Diesel, PM _{2.5} , O ₃ , Asthma, Cardio., LBW	567	481

Lower number of tracts is beneficial so we can focus sampling



How do we identify tracts most affected by traffic air pollution? (2)

Fixed Indicators

- Traffic impacts
- Diesel particulate matter emissions

Varied Indicators

- Ozone (O₃) concentration
- PM_{2.5} concentration
- Asthma emergency department visits
- Cardiovascular disease
- Low birth-weight infants

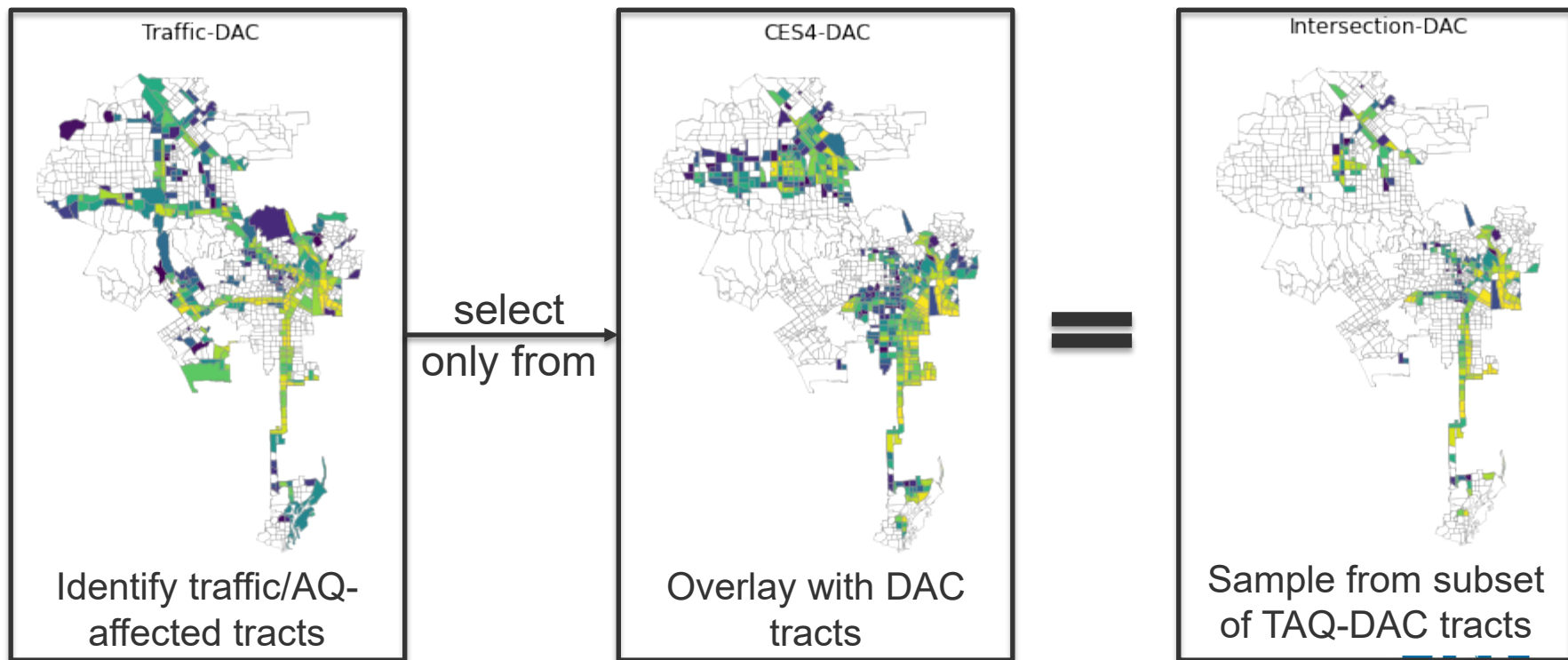
Analyze each combination

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Lower number of tracts is beneficial so we can focus sampling

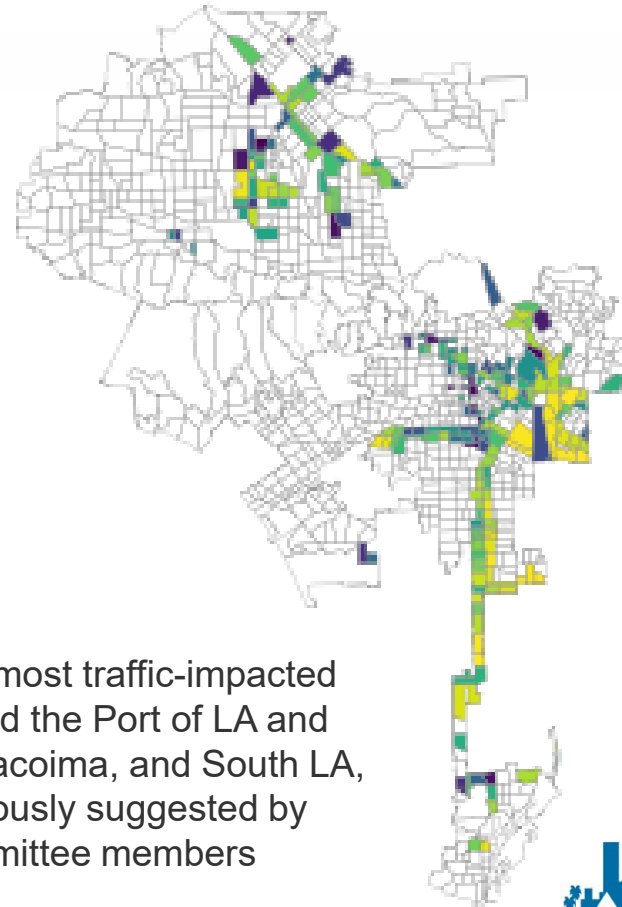


Traffic-affected DACs for sampling and analysis



Feedback on traffic/AQ-affected DAC analysis approach

Intersection-DAC



Note: Includes the most traffic-impacted areas near LAX and the Port of LA and within Wilmington, Pacoima, and South LA, which were previously suggested by Steering Committee members

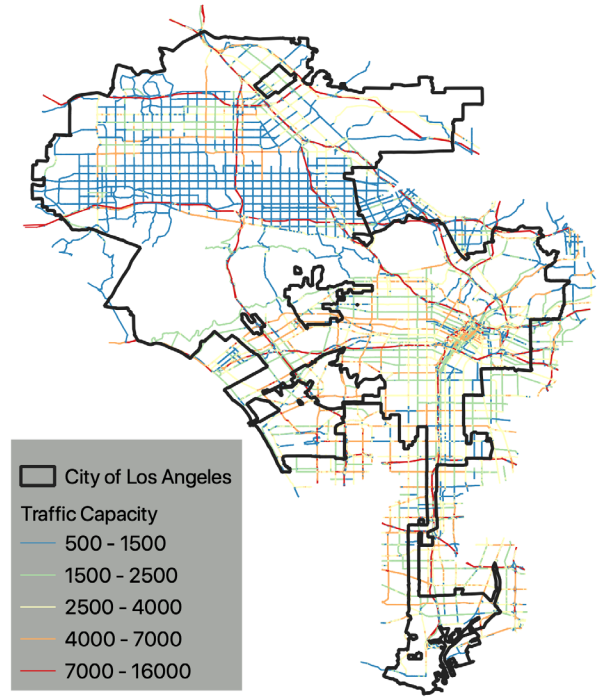


NREL updates



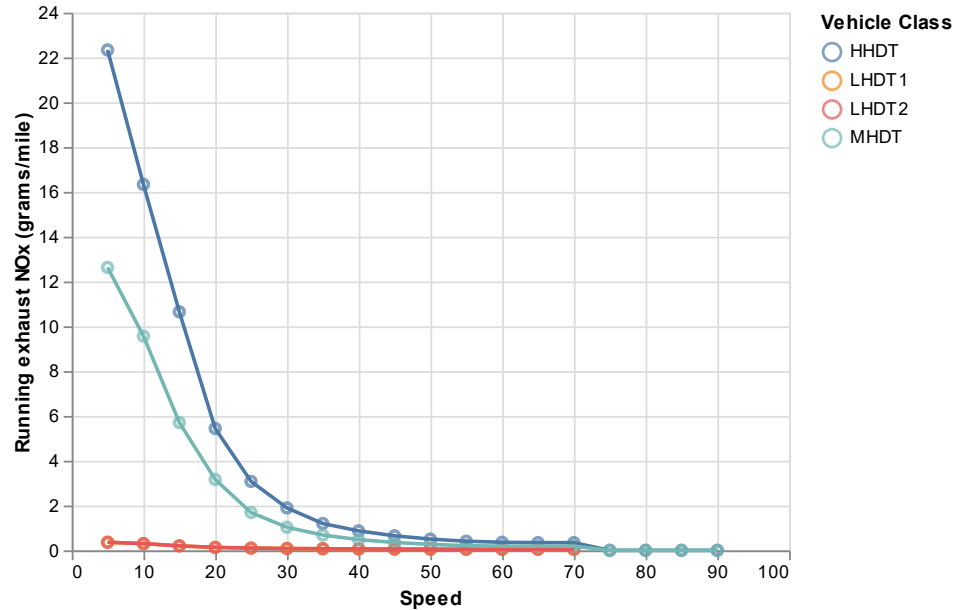
Traffic Activity Data

- We are expecting to use vehicle activity projection data based on UCLA Mobility Lab travel demand modeling.
- Vehicle types included:
 - light heavy-duty trucks (LHDT)
 - medium heavy-duty trucks (MHDT)
 - heavy-heavy duty trucks (HHDT)
 - Light duty vehicles (LDVs)
- UCLA's dynamic model is likely better than Southern California Association of Governments model which is static modeling
 - Can affect parameters such as speed and congestion which can affect emissions

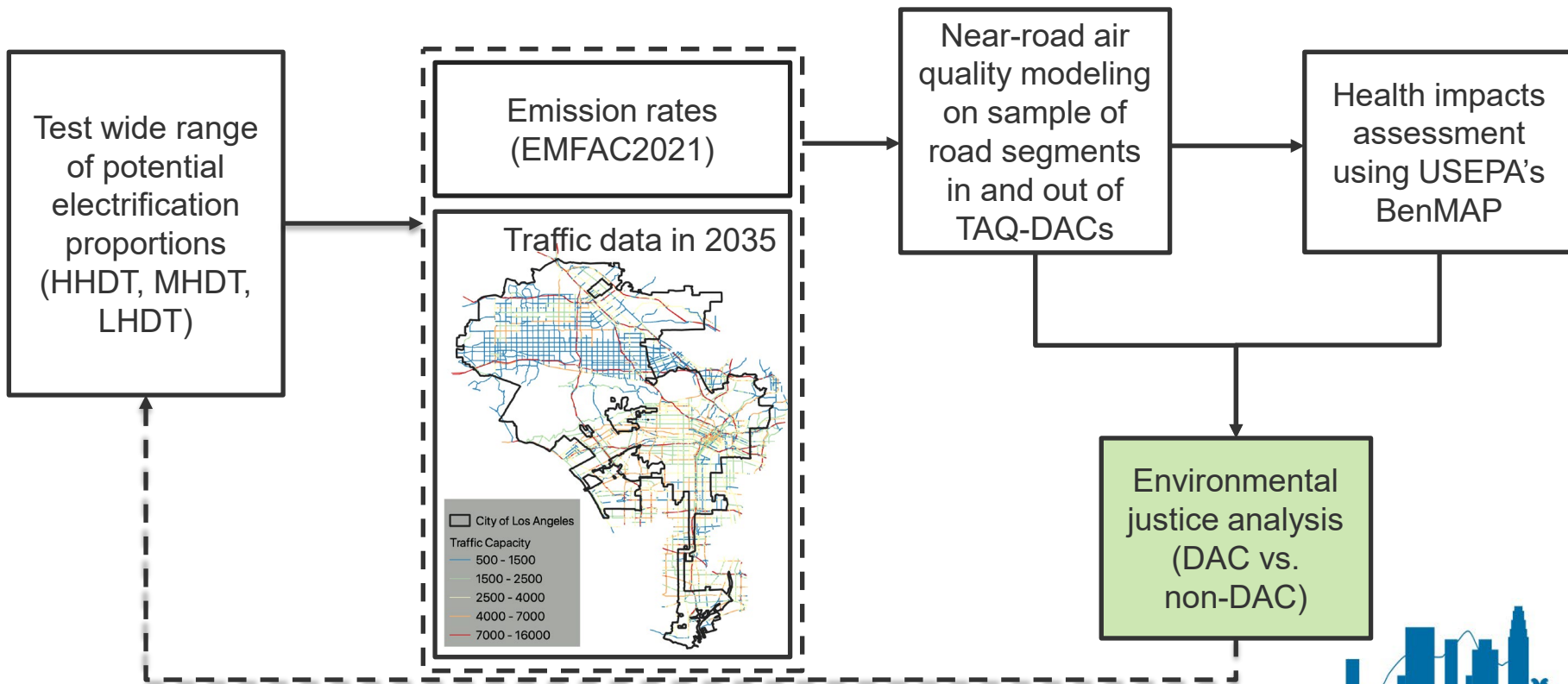


Emission rates for different vehicles in LA region

- Emission rates will be based on the most recent version of California Air Resources Board (CARB)'s EMFAC model
- Emission rates depends on factors such as these which are included in the UCLA model:
 - Vehicle type,
 - Fuel type,
 - Speed
- Emission factors for various pollutants such as nitrogen oxides (NO_x), particulate matter (PM_{2.5}) (including brake and tire wear)



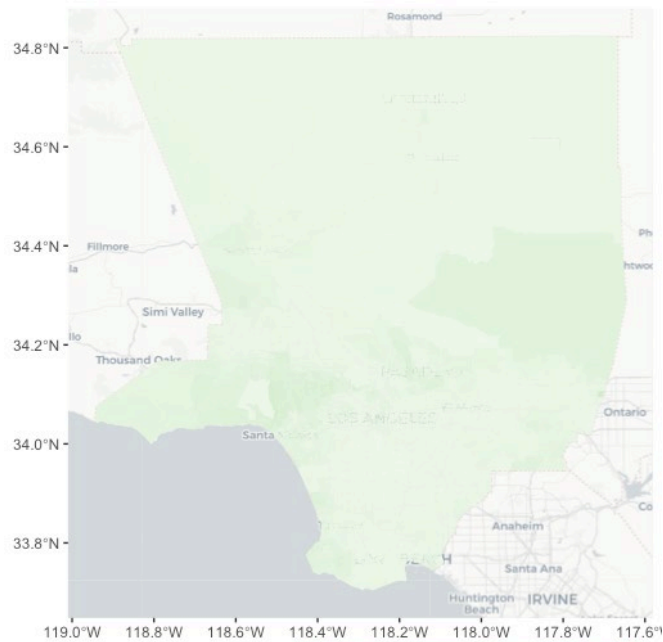
Putting it all together: strategic insights from health and EJ analysis



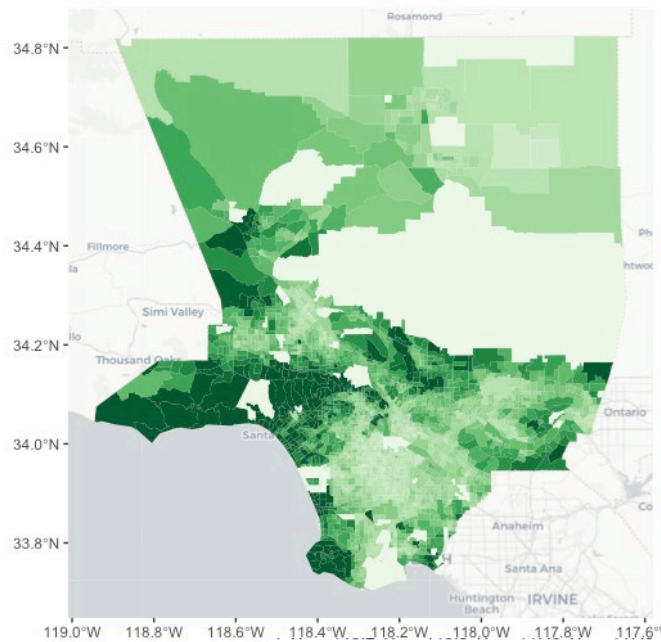
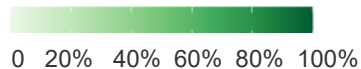
UCLA Updates



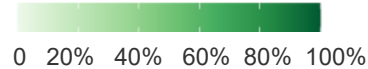
Zero Emissions Vehicles (ZEV) Percentage Map in 2017 and 2035



ZEV Ownership in 2017

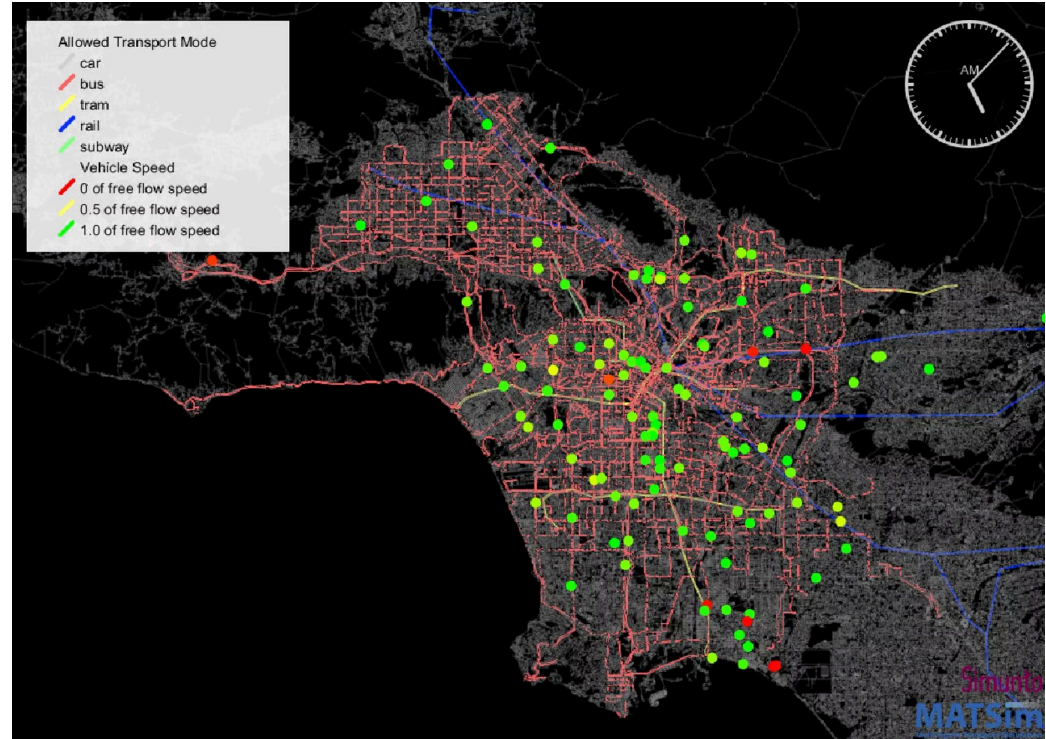


ZEV Ownership in 2035

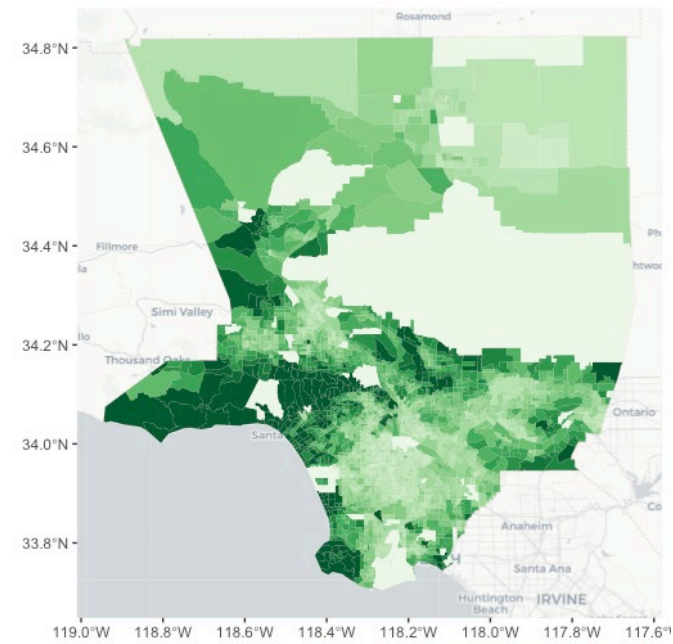


Integrated Transportation Model

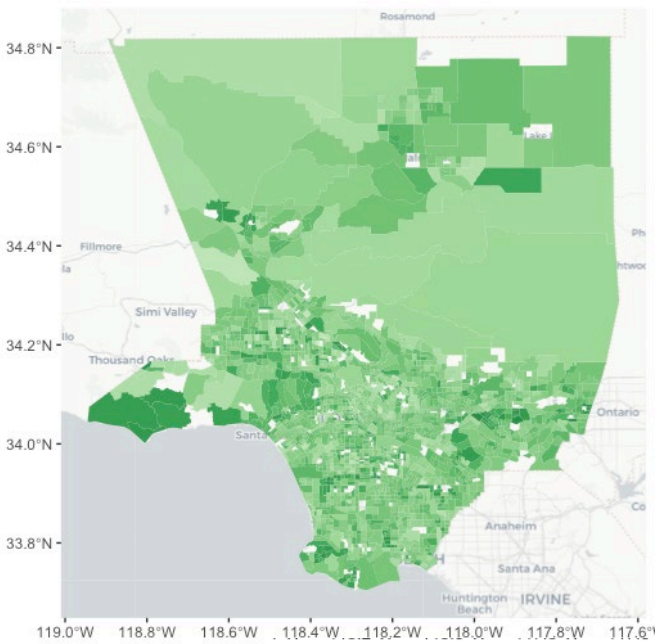
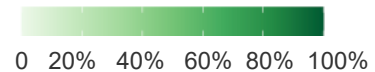
- Simulating explicit vehicle movement in a multimodal network with the congestion impact
- Incorporating all types of vehicle
 - Passenger cars
 - Light/Medium/Heavy duty trucks
 - Transit vehicles



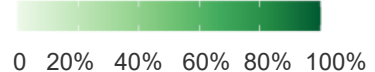
Zero Emissions Vehicle Ownership vs. Electric Vehicle Miles Traveled (eVMT)% in 2035



ZEV Ownership in 2035



eVMT % in 2035



Scenarios

	Scenario 1	Scenario 2	Scenario 3
Name	2035 ZEV Disparity	2035 ZEV Equity	2035 ZEV Equity (more MD-HD) (MSS)
Energy Profile	LA100 Early & No Biofuel – 100% Clean Energy		
On-road Transportation Electrification Profile			
Light-duty	50%	50%	50%
Medium-duty	19%	19%	22%
Heavy-duty	10%	10%	39%
School and urban buses	100%	100%	100%
On-road Transportation Emission Spatial Distribution			
Passenger Vehicle	Emission reduction map based on (1) ZEV ownership and (2) the MATSim simulated trips		
Medium-duty		Equally distributed	Equally distributed
Heavy-duty			
School and urban buses			
ZEV Fleet Profile (LDV / MDV / HDV)			
PHEV	25% / 0% / 0%		
BEV	67% / 100% / 100%		
FCEV	8% / 100% / 100%		
Off-road Transportation			
	EMFAC 2035 Original	EMFAC 2035 Original	MSS
Oil & Gas Industry			
Demand Reduction	Scale down based on ZEV population		

MSS: Mobile Source Strategy

PHEV: Plug-in Hybrid Electric Vehicle

BEV: Battery Electric Vehicle

FCEV: Fuel-cell Electric Vehicle

LDV: Light-duty Vehicle

MDV: Medium-duty Vehicle

HDV: Heavy-duty Vehicle



LA County Emission Inventory Change (2017 vs. 2035)

Scenarios	CO	NH ₃	NO _x	PM ₁₀	PM _{2.5}	ROG	SO _x
BASE - 2017 (tons / day)	1000	46	270	89	34	303	13
ZEV – 2035 (tons / day)	452	47	143	89	32	217	12
MSS - 2035 (tons / day)	431	46	101	89	31	216	12
Scenario Comparison							
(ZEV-BASE)/BASE	-55%	1.5%	-47%	0.6%	-5.7%	-28%	-4.0%
(MSS-ZEV)/ZEV	-4.5%	-1.3%	-29%	-0.3%	-1.6%	-0.4%	-0.8%



Q&A



Air Quality & Health Equity Strategies Development

Megan Day, NREL

Simon Zewdu, LADWP



Output Metrics and Enabled Equity Strategy Analysis – Air Quality and Health

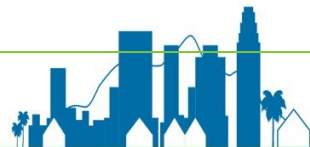
Medium- & Heavy-Duty Vehicle (MHDV) Sector Output Metric

Changes to concentration of air pollutants (PM_{2.5} and NO_x) in different parts of the city under different truck electrification strategies

Impact of pollutant changes in different parts of the city on mortality and morbidity

Example of Enabled Equity Strategies

- Identification of MHDV electrification strategies that result in pollutant concentration/health changes that benefit traffic-impacted disadvantaged communities, including
 - Vehicle type (e.g., would electrifying delivery trucks lead to greater air pollutant/health reduction than garbage trucks?)
 - Targeted MHDV charging infrastructure locations
- Potential implementation partners
- Comparison to benefits from electrification of light-duty vehicles to inform investment and program prioritization



Going Forward

Tentative

Steering Committee Meetings

October 19, 2022
Virtual

- Steering Committee member check-in and spotlight
- Household energy modeling approach
- Shared solar siting analysis
- Energy Atlas

Subsequent Meetings

- **Third Wednesday** of each month, 10:00 a.m. – 12:00 p.m. PT
- **Virtual** for near-term

What would you like to discuss in upcoming meetings?
Drop your agenda suggestions in the chat!



Thank you!
