

Climate Change and Transit Twitter Chat April 21, 2020

Summary

National RTAP held a #ClimateTransit Twitter chat on April 21, 2020 to discuss how climate change could impact rural communities and transit agencies. We also discussed how transit agencies can prepare for potential effects of a changing climate, as well as tackle their emissions to mitigate potential climate impacts. The chat was moderated by Josh Goldman, Associate Director, Climate Nexus. Camron Gorguinpour, Director of Mobility Solutions at Engie Impact, served as the expert panelist. The chat was fun as well as informative, including animated gifs and of cats telecommuting and an apt tweet from Josh - IS #CLIMATETRANSIT TRENDING YET?

Participants included Arizona Transit Association, Center for Transportation and the Environment (CTE), Coalition for Smarter Transportation (CoaST), Citizens for Modern Transit/Saint Louis (CMT St. Louis), Florida RTAP, National Center for Applied Transit Technology (N-CATT), Nebraska Transit, Pavluchuk & Associates, Tampa Bay Clean Cities Coalition (TBCCC), Texas Transportation Research, Transportation Research Board (TRB), Union of Concerned Scientists, and many others.

Visit the [chat transcript](#) for questions asked during the chat and panelist and participant replies. Answers to chat questions are provided below.

Question 1: How can climate change impact rural communities?

Answers:

- Panelist Camron Gorguinpour stated that climate change affects all aspects of rural livelihood (drought, flood, extreme weather events). Plus, limited energy, transportation, and communications infrastructure puts vulnerable populations at disproportionate risk. He particularly pointed out the fires from the climate crisis that have been decimating his home state. National RTAP saw a lot of this in rural communities in their [Fire and Flood webinar](#).

- N-CATT pointed out that many rural communities include coastal communities that are and will be affected by flooding. Others depend on tourism based on the natural beauty of an area, or on farming. All of these could be put at jeopardy due to climate change.
- Florida RTAP explained that natural resources are economic drivers for rural communities, and climate change impacts include increased inland flooding, drought, crop and livestock loss, and infrastructure damage.
- CoaST described how extreme weather events tied to climate change can decimate farming and other staples of the rural economy. In addition, we have seen where flooding has taken out roads and bridges which serve as the only access to jobs, education, health care for some communities
- National Oceanic and Atmospheric Administration (NOAA) [found](#) that the global departures from average temperature for 2019 was the second highest since record keeping began in 1880.
- We need to remember that climate change affects all aspects of rural life. And that all those aspects can affect transportation in rural areas. Help the climate and it helps transit riders.

Question 2: How can climate change impact transit routes and agencies?

Answers:

- “Maintaining basic public services in rural communities is always a challenge, and climate change creates disruptions to critical infrastructure that can cost lives and livelihood,” declared Camron.
- CoaST has members that are working with rural communities on job access and access to health care. Using technology will help agencies respond better to needs of rural communities that are impacted by climate change, where that be a pandemic, a flood, etc. Utilizing innovations such as microtransit, long-distance vanpooling, and carpool options allow agencies to respond to impacts of climate change as well as address the underlying causes.
- Florida RTAP has observed that climate change impacts can impact roadway infrastructure and networks, and also present unique challenges for the State of Florida and other coastal communities that experience more severe tropical weather, flooding, and sea level rise.
- Camron explained that maintaining basic public services in rural communities is always a challenge, and climate change creates disruptions to critical infrastructure that can cost lives and livelihood.
- National RTAP held a [#TransitDisasterResponse Twitter Chat](#) and some agencies in rural areas said it took over a year to recover from extreme weather emergencies.
- Try this [Think Tank Search](#) to find out what leading thought leaders are saying about climate change and transit.

Question 3: What can rural transit agencies do to prepare for climate change?

Answers:

- Rural transit can highlight importance of climate change through thoughtful training (such as this Twitter chat) and planning on sustainability and climate-friendly transportation solutions that work in rural America.

- Nebraska Public Transit works with rural transit agencies to develop safety plans, including disaster preparation and emergency plans resulting from flooding and severe weather.
- CoaST declared that agencies need to think outside the box and stop acting like asset managers and focus more on performance. The truth is that many rural agencies have already made this transportation (something large urban agencies largely have not). Broadband technology will allow rural mobility agencies to help deliver telehealth and better connect citizens to education opportunities. But agencies also can be work with employers, universities, and other to develop solutions that work best for those agencies. Again, CoaST believes that in many cases, urban agencies can follow the lead of some rural entities that have already begun down this path, such as leaders like Mountain Line in Flagstaff, AZ.
- Nashua Transit System has gone green! Their [new fleet](#) includes 2 electric hybrid buses and 10 controlled natural gas buses. To add to this sustainability, all buses and trolleys are equipped with bike racks.
- In the U.S., many agencies are taking strong actions to electrify their bus fleets. There is a lot of great work in Latin America (Santiago, Bogota, Medellin). Engie Impact and World Resources Institute are two of many leaders helping the transition.
- Read TRB's article on [Transportation Planning to the Extreme for Weather and Climate Change](#) and consider become a friend of a standing committee focused on the environment, extreme weather and climate change.
- “Adaptable, engaged with the community, support resilient economic development and access to school, work and medical as well as food. Access is the operative word,” exclaimed National RTAP Executive Director Robin Phillips. “Rural Communities are estuaries for innovation, or they can be. Rural transit is very nimble in many communities and is a willing partner with economic development, tourism, Chambers of Commerce, and medical facilities.”
- National RTAP has an [Alternative Fuels Topic Guide](#) and an [Electric Vehicles Topic Guide](#). Find resources like USPIRG's [Paying for Electric Buses](#) and FTA's [Low or No Emission Vehicle Program](#).
- Florida RTAP wants agencies to consider both mitigation and adaptation. Alternative fuels can help to offset greenhouse gas emissions, as well as efficiency improvements. Adaptation strategies, such as increased fuel storage and increased interagency cooperation can help prepare rural transit agencies to respond to climate change.
- “Education is always the first step,” advised Camron. “People must understand that climate change is real and affecting their lives. We should also work to communicate the importance to Congress and states of providing more funding to improve rural transit.”
- N-CATT believes that public outreach and engagement piece is critical in order to grow rural transit and we should educate the public about the benefits of transit for each community.

Question 4: How does public transportation affect climate change? How does taking transit help the environment?

Answers:

- Public transportation helps to reduce the number of personal vehicles on the road, which in turn reduces greenhouse gas emissions. According to 2019 APTA's [Public Transportation](#)

[Factbook](#): Communities that invest in public transit reduce the nation's carbon emissions by 37 million metric tons annually.

- Citizen's for Modern Transit St. Louis [data](#) shows that public transportation produces 95% less carbon monoxide, 90% less volatile organic compounds and about 50% as much carbon dioxide and nitrogen oxide per mile compared to private vehicles.
- Doctor Ingo Weber, an Anesthetist, Clinical Lecturer, and Public and Environmental Health Advocate shared [A Green Stimulus to Rebuild Our Economy - Green Stimulus Proposal](#) - perhaps as something to consider as part of the climate bill?

Question 5: How do emissions from electric buses compare to diesel or natural gas?

Answers:

- Robin believes that model communities are coming around. Oklahoma City is getting the doing great work with placemaking. This is key. People love to live in places, not warehouses. Multimodal infrastructure is the foundation for real placemaking.
- The [good news](#) from Environment America - A clean, efficient, low-carbon transportation system is possible. Read about how to electrify public transportation to save 17 million metric tons of greenhouse gas emissions each year.
- Is hydrogen an opportunity to reduce CO2 emissions in transportation? See what Intelligent Transport [says](#).
- A [study](#) of renewable gasoline found a 33% reduction in carbon emissions.
- You can find more ideas for sustainable climate-focused ideas from National RTAP's [Livability Topic Guide](#).
- Electric buses have significantly lower life cycle greenhouse gas emissions than diesel and natural gas, on all grids in the United States. See [work](#) by Jimmy O'Dea and the Union of Concerned Scientists. [Research](#) found that electric bus life cycle GHG emissions range from 29 to 87 percent lower than diesel buses and 19 to 85 percent lower than natural gas buses, depending on the grid mix in the United States.

Question 6: What are some examples of transit agencies tackling their climate emissions or preparing for climate impacts?

Answers:

- As of last month, there were 2,200 electric transit buses operating or on order in 45 states and DC, out of about 63,000 total transit buses. "Let's get some electric buses in Arkansas, New Hampshire, North Dakota, South Dakota, and WestVirginia," tweeted Jimmy.
- CALSTART [reported](#) that the U.S. Zero-Emission bus fleet grew nearly 37 percent over the previous year and that California, Washington, Florida, Colorado, Illinois, North Carolina led adoption.
- Transit agencies are incorporating alternative fuels, using energy conservation and technology to reduce operational emissions, integrating renewable energy, and providing more transportation choices tailored for their customers.
- The Blue Lake Rancheria Tribe has a biodiesel program for restaurants on or near the reservation. They are working with Humboldt State University to use biodiesel in all their buses.

- Seneca Transit in South Carolina went 100% electric and is now adding commuter services and building regional electric services.
- The Alameda-Contra Costa Transit District (AC Transit) has been a leader in hydrogen buses, but it's a bit more complicated to identify vehicles and supporting infrastructure. That said hydrogen is a great potential option for larger vehicles, like buses.
- The Republic of Geneva has an [anti-smog scheme](#) that offers temporary free public transportation whenever pollution concentrations reach a warning level.
- Take a look at some rural zero emission bus deployments from the [National RTAP/CTE webinar](#).

Question 7: What resources are there to help transit agencies cut their emissions or prepare for climate impacts?

Answers:

- Transit agencies should connect with their local [Clean Cities Coalition](#) to discuss ways and strategies that agencies can work to diversify their fleet and integrate energy efficient.
- The Office of Energy Efficiency and Renewable Energy's [Alternative Fuels Data Center](#) offers a searchable database of available controlled natural gas, hybrid, electric vehicles and more.
- Take a look at FHWA's [Congestion Mitigation and Air Quality Improvement Calculator Toolkit](#). There's tools and training on transit bus replacements and retrofits, alternative fuels, vanpooling, and more.
- [World Resources Institute's Ross Center for Sustainable Cities](#) has a ton of great information on improving the quality of transit systems all over the world. Camron is partial to their electric mobility products.
- Follow the [Climate Nexus Twitter feed](#) for breaking news and insight.
- Stop the spread of climate change misinformation. National Academies of Sciences, Engineering, and Medicine volunteers spent an [edit-a-thon](#) improving Wikipedia pages with info from Negative Emissions Technologies and Reliable Sequestration: A Research Agenda.

Question 8: What about charging infrastructure or hydrogen fueling infrastructure? Where should a transit agency start?

Answers:

- “With a plan!!” declared Robin. “If you can't imagine it, it won't happen. If you don't plan for it you will never get any help and definitely never get any funding.”
- “I've been waiting this whole time for this question,” said Camron. Lack of infrastructure planning is #1 oversight in electrification projects. Agencies should think through not just immediate needs but long-term plans. Talk to your electricity provider for battery electric buses! Do this before you order any buses! For hydrogen infrastructure, leading H2 bus adopters, such as AC Transit and Stark Area Regional Transit Authority (SARTA) are great resources. So are Center for Transportation and the Environment (CTE) and bus manufacturers. Agencies can also call organizations like Engie Impact for help.
- California Air Resources Board put on an excellent workshop with transit agencies, bus manufacturers, and charging providers sharing a wealth of information on zero-emission bus technology. Presentations can be [found here](#).

- National Renewable Energy Laboratory’s (NREL) [Fuel Cell Electric Bus Evaluations](#) advises you to contact your local utility to work with you on identifying EV charging considerations for your fleet, as there are many factors that come into play.
- Washington DOT manages a [program](#) that deploys electric vehicle fast charging infrastructure along highway corridors in Washington state.
- For training on this and many other zero emission bus topics, register for CTE’s [Zero Emission Bus Conference](#). You’ll find tons of interest in zero-emission transit buses.

Question 9: What impacts are COVID-19 having on you, your transit options, or transportation or our world more generally?

Answers:

- Robin answered, “I am excited many transit programs are bringing food and pharmacy supplies to rural persons instead of risking drivers and passengers with these trips. I hope we will be able to continue doing this delivery work in rural areas so we can focus on moving people for social and medical trips. Adapting to COVID 19 is leapfrogging many systems in to the access mindset.”
- N-CATT is curious whether we can continue the silver linings of the current calamity - decreased car use, appreciation of transit and transit workers, fare free transit, and streets that are more pedestrian and bike friendly. One question they had about climate change and transit is whether rural communities will be left without resources after COVID-19 to address climate change, because they will be struggling to stay in business or provide even minimal service. From behind the front lines of essential role of transit here at N-CATT, who is concerned that despite publicity about COVID-19 Transit Heroes, that rural transit will be left in a worse position soon due to hemorrhaging of revenue sources.
- Teja on the Horizon, an environmental scientist, shared Carbon Brief’s [Coronavirus: What could lifestyle changes mean for tackling climate change?](#)
- Some sage words from Camron, “If anything good might come of this crisis, it's that we can rethink outdated ideas -- including our transportation system. We should definitely be taking this time of reduced travel to find better ways to optimize travel for the future.”

Question 10: How much of a role do mobility data standards and open source software and open data have on linking those sectors of the rural economy to transit?

Answers:

- “Huge!” exclaimed Robin. We could not have itinerary platforms like Google Transit without standards like GTFS. I want to implement and start building transactional standards so we can be more multi-modal and integrate demand response with fixed-route services, see [TCRP G-16](#).
- CoaST discussed account-based fare collection. Fare collection is not talked about enough. Account based fare collection will allow agencies more flexibility to provide options and integrate. They are working with Congress to establish some national leadership that we hope will create a framework for mobility marketplaces. The fundamentals of a mobility market place are open payments, open date, independent management, and security.

Question 11: What is the next National RTAP Twitter Chat?

Answers:

- Stay tuned for the second annual [#RuralTransitDay](#) Twitter Chat on July 16, 2020.