

# Overview of the Future of Mobility Report

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OTAQ's Climate Analysis & Strategies Branch

MSTRS Fall Meeting

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OTAQ facilitates coordination of MSTRS



# MSTRS' Report Background

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OTAQ facilitated discussions for MSTRS  
Future Mobility efforts

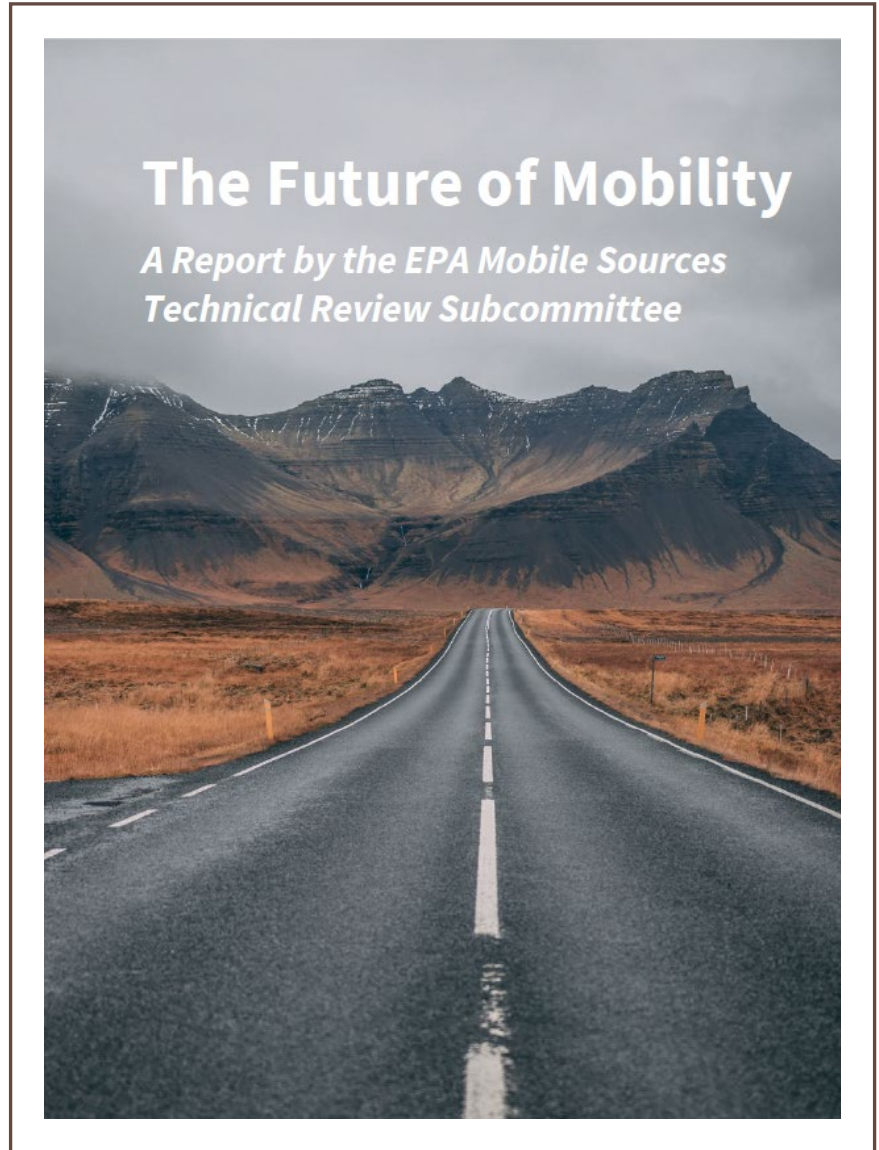
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Since mid-2017, MSTRS has been discussing emerging mobility trends such as EVs, shared-use mobility, and automated vehicle technology.

# MSTRS Future Mobility Report Overview

At EPA's request, from Sept. 2019 - June 2021, MSTRS met regularly to develop insights and recommendations that sought to address a series of questions arising from these mobility trends, assisted by an EPA moderator and scribe for each subgroup.

- **Technology**—Accelerating electrification of LD and some segments of MD and HD truck & bus market;
- **Fuels**—Increasing use of renewable, alternative fuel, and/or other low-carbon fuels in today's vehicles and future vehicles that will continue to operate on liquid fuels;
- **Personal Mobility**—Changes in personal mobility that stem from the emergence of micro-mobility and the intersection of transit, land use, and community development; and
- **Goods Movement**—Shifts in last-mile goods movement as retail goods increasingly are bought and sold online, a trend that has accelerated during the Covid-19 pandemic.



# EPA Contributors

## Overall Involvement

- Karl Simon, Bill Charmley, Byron Bunker, and Sarah Dunham
- Julia Burch, Sarah Roberts, Trish Paff, and Courtney McCubbin

## MSTRS Work Groups

- Technology - Christy Parsons (moderator), Amy Bunker, Susan Burke
- Personal Mobility - Andrea Maguire/Lisa Snapp (moderators), Aaron Hula (scribe)
- Fuels - Diana Galperin (moderator), Michael Shell (scribe)
- Goods Movement - Britney McCoy (moderator), Jessica Daniels (scribe)

## MSTRS members and report authors

Rachel Muncrief<sup>1</sup>, International Council on Clean Transportation

Jim Kliesch, American Honda Motor Company

Rasto Brezny, Manufacturers of Emission Controls Association

Steve Cliff, California Air Resources Board (Richard Corey, alternate)

Susan Anenberg, Environmental Health Analytics

Barbara Kiss, General Motors Company

Cynthia Williams<sup>1</sup>, Ford Motor Company

Luke Tonachel, Natural Resources Defense Council

Rich Kassel, Tri-State Transportation Campaign and MSTRS Chair

Matt Barth, Institute of Electrical and Electronics Engineers

John Eichberger, Fuels Institute

S. Kent Hoekman, *Energies* journal

Bob Anderson, Chevron USA

Tracey Jacksier, Air Liquide

Michael Berube, U.S. Department of Energy

Joanne Rotondi, Hogan Lovells

Diep Vu<sup>1</sup>, Marathon Petroleum Company

Elena Craft, Environmental Defense Fund

Blair Chikasuye, Hewlett Packard

Andrew Cullen, Penske Logistics

Peg Hanna, New Jersey Department of Environmental Protection

Clay Pope, EPA Clean Air Act Advisory Committee

Dave Cooke, Union of Concerned Scientists

Elaine O'Grady, Northeast States for Coordinated Air Use Management

Susan Shaheen, International Journal of Sustainable Transportation (Adam Cohen, alternate)

Michael Replogle, New York City Department of Transportation

Michael Iden, Association of American Railroads

Nancy Kruger, National Association of Clean Air Agencies

George Lin, Caterpillar, Inc.

Matt Miyasato, South Coast Air Quality Management District

Simone Sagovac, Southwest Detroit Community Benefits Coalition

Matthew Spears<sup>1</sup>, Cummins, Inc.

# EPA challenged each work group with a list of scenario questions to initiate discussion on Future Mobility

Subgroup	Scenario
<b>Technology</b> “Zero Emissions”	<i>In a world where the majority of new light-duty and heavy-duty fleets are zero tailpipe emission technologies (e.g., battery electric, hydrogen fuel cell), describe EPA’s work and role in reducing emissions from transportation while maintaining mobility.</i>
<b>Personal Mobility</b> “Share a Ride”	<i>In a world where the majority of people in the U.S. get from Point A to Point B using a transport mode other than a personally-owned vehicle, describe EPA’s work and role in reducing emissions from transportation while maintaining mobility/accessibility.</i>
<b>Fuels</b> “Future Fuels”	<i>In a world where alternative fuels such as electricity and hydrogen are used to meet a significant percentage of the light-duty and heavy-duty onroad fuel demand, describe EPA’s work and role in reducing emissions from the fuel pool.</i>
<b>Goods Movement</b> “I Want My Stuff!”	<i>In a world where goods delivery primarily happens through on-line orders and by direct-to-household-and-business deliveries, describe EPA’s work and role in reducing emissions from transportation options in the supply chain (e.g., between the final distribution site and a household or business).</i>

# Questions Posed to Each Subgroup

What are the opportunities and challenges that may arise in each scenario?

What factors are most important for positive environmental outcomes?

What type of information would EPA need?

What tools, skills, or authority would EPA need to continue reducing transportation emissions in the given scenario?

What role would local and state government, industry, environmental organizations, and other stakeholders play in this evolving landscape?

What other new concepts are emerging that EPA needs to consider, i.e., what is the next disruptor?



# 10 Takeaways from Future Mobility Report

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1. To meet the nation's GHG, criteria pollution, and other Future Mobility goals, EPA should adopt a *comprehensive approach to decarbonizing the entire transportation sector* – which will mean accelerating the use of zero-emission vehicles, decarbonizing the liquid fuels and the engines that will continue to be used in many applications, and finding ways to move people and goods in as sustainable and equitable a way as possible.





# 10 Takeaways from Future Mobility Report

2. Good data and analysis will be critical to meeting our Future Mobility goals.
  - Databases, emissions models, monitoring
3. EPA should consider ways to integrate and prioritize principles of *social equity*, *environmental justice*, and *mobility justice* in ways that have never been done before.

# 10 Takeaways from Future Mobility Report

4. EPA will need to identify and pursue ways to *increase collaboration across agencies* and levels of government.
5. EPA should consider solutions that are outside its traditional regulatory authority.
6. Fuel-neutral, technology-agnostic performance standards will continue to be critical for both fuels and vehicles.
7. Incentive, public education, and outreach programs will continue to be critical to accelerate deployment.

# 10 Takeaways from Future Mobility Report

8. EPA will need to consider new approaches to solve new problems and old problems (e.g., legacy vehicles), some of which are beyond EPA's traditional role.
9. EPA should consider additional strategies that will be needed for hard-to-electrify components of the legacy and future fleets.
10. There is no “silver bullet.”

# The Report

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- ~ 180-page report (4 sections)
- Each section was written in a different style and with different authors.
- The "style" of the recommendations differ from each subgroup.
- 208 recommendations captured

MSTRS Subgroup	Count of Recommendations	Percentage of Recommendations
Fuels	13	~ 6%
Goods Movement	57	~ 27%
Technology	59	~ 28%
Personal Mobility	79	~ 38%
<b>Total</b>	<b>208</b>	

# Key Recommendation “Areas” Categorized from Report

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Cross-Government Collaboration (31 recommendations)

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Equity (24)

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Regulations (23)

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Incentive Program (23)

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Technically Sound Approach to Transportation Air Quality [analysis-based] (22)

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Strategic Planning (19)

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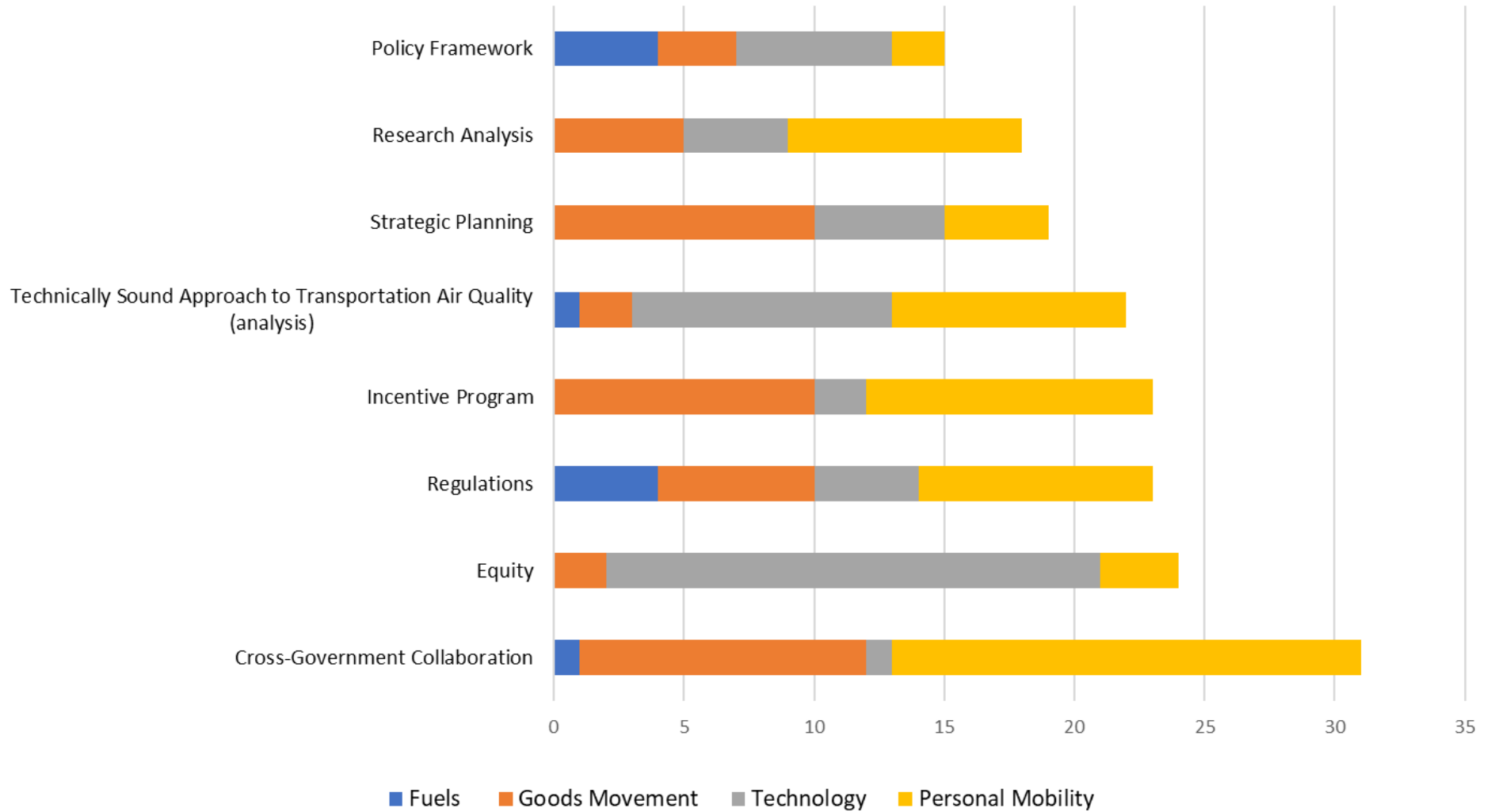
Research & Analysis (18)

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Policy Framework (15)

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## MSTRS Recommendation Category by Count





	<b>Recommendation Category Ranking by Subgroup</b>		
	<b>First</b>	<b>Second</b>	<b>Third</b>
<b>Fuels</b>	Regulations Policy Framework (tied)		Cross-Government Collaboration Technically Sound Approach to Transportation Air Quality Analysis (tied)
<b>Goods Movement</b>	Cross-Government Collaboration	Incentive Program Strategic Planning (tied)	
<b>Technology</b>	Equity	Technically Sound Approach to Transportation Air Quality Analysis	Policy Framework
<b>Personal Mobility</b>	Cross-Government Collaboration	Incentive Program	Regulations Technically Sound Approach to Transportation Air Quality Analysis (tied)

# Now What?

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- With over 200 recommendations, there's a lot for us to dissect further.
- Reoccurring themes:
  - Cross-Government Collaboration
  - Equity
  - Incentive Programs
  - Regulations
  - Technical Analysis

