Moving Toward Carbon-Free Transportation in the U.S.

What Now?

Webinar and discussion
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FRONTIER GROUP
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Frontier Group provides information and ideas to help citizens build a cleaner, healthier, fairer and more democratic America.

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A New Way Forward: Transportation and Global Warming

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Purpose

• Share findings and ideas from the *New Way Forward* project.
• Spur conversation about next steps – local, state and federal.
• Build connections and lay foundations for continued work.
SHALL WE SAVE NEW YORK?

A Vital Question To Every One
Who Has Pride In This Great City

SHALL we save New York from what? Shall we save it from unnatural and unnecessary crowding, from depopulated sections, from being a city unbeautiful from high rents, from excessive and illy distributed taxation? We can save it from all of these, so far at least as they are caused by one specified industrial evil—the erection of factories in the residential and famous retail section.

The Factory Invasion of the Shopping District

The factories making clothing, cloaks, rain, fur, petticoats, etc., have forced the large stores from one section and followed them to a new one, depleting it of its normal residents and filling it with big loft buildings displacing homes.

The fate of the sections downtown now threatens the fine residential and shopping district of Fifth Avenue, Broadway, upper Sixth and Madison Avenues and the cross streets. It requires concentrated co-operative action to stem this invading tide. The evil is constantly increasing; it is growing more serious and more difficult to handle. It needs instant action.

The Trail of Vacant Buildings

Shall the finest retail and residential sections in the world, from Thirty-third Street north, become blighted the way the old parts of New York have been?

The lower wholesale and retail districts are deserved, and there is now enough vacant space to accommodate many times over the manufacturing plants of the city. If new modern factory buildings are required, why not encourage the erection of such structures in that section instead of erecting factory buildings in the midst of our homes and fine retail sections.

How it Affects the City and its Citizens

It is impossible to have a city beautiful, comfortable or safe under such conditions. The unnatural congestion sacrifices fine residence blocks for factories, which remain for a time and then move on to devastate or depress the other section, leaving ugly scars of blocks of empty buildings unused by business and unsuited for residence: thus unsettling real estate values.

How it Affects the Taxpayer

Every man in the city pays taxes either as owner or tenant. The wide area of vacant or depreciated property in the lower middle part of town means reduced taxes, leaving a deficit made up by extra assessment on other sections. Taxes have grown to startling figures and this affects all interests.

The Need of Co-operative Action

In order that the impending menace to all interests may be checked and to prevent a destruction similar to that which has occurred below Twenty-third Street:

- We ask the co-operation of the various garment associations.
- We ask the co-operation of the associations of organized labor.
- We ask the co-operation of every financial interest.
- We ask the co-operation of every man who owns a home or rents an apartment.
- We ask the co-operation of every man and woman in New York who has pride in the future development of this great city.

NOTICE TO ALL INTERESTED

1916
20th Century Opportunity
21st Century Burden
U.S. produces more carbon pollution from its transportation system than is produced by any entire country in the world other than China, India and Russia.

Transportation Is Climate Enemy #1
U.S. Transport Must Go Virtually Carbon-Free by Mid-Century

Global greenhouse gas emissions (GtCO₂eq)

- Historical emissions, incl. LULUCF
- Current
- Pledge and INDCs
- 2°C consistent median and range**
- 1.5°C consistent median and range***

Warming projected by 2100

Baselines:
4.1 - 4.8°C

Current Policies
3.3 - 3.9°C

Pledges and INDCs
2.4 - 2.7°C

Below 2°C
1.5 - 1.7°C

Below 1.5°C
1.3 - 1.5°C

© www.climateactiontracker.org/Climate Analytics/Ecofys/NewClimate/PIK
The Takeaway

Transformation to a zero- or near-zero carbon transportation system is possible ... and the tools exist today to make it happen.
We Have the Tools to Cut Carbon Pollution from Transportation

Walking & Biking
The number of people biking and walking to work in America's cities is on the rise—especially in places that have made strides to improve safety.

Public Transportation
Transit ridership hit a modern high in 2014, reducing vehicle travel and carbon pollution.

Urbanization & Smart Growth
We are experiencing an urban resurgence as millennials and others seek walkable neighborhoods where people drive less.

Information Technology
Advances in technology are enabling Americans to plan, schedule and pay for low-carbon modes of travel.

Smart Pricing
New models for pricing roads and parking reduce congestion on roads and encourage the use of efficient modes of travel.

Shared Mobility
Technology-enabled carsharing, ridesharing and bikesharing are growing quickly, expanding the number of people who can live car-free or car-light lifestyles.

Repowering Vehicles
Electric cars are improving in performance and coming down in price, and can be powered with clean, renewable energy.

Reallocation Space
Cities around the world are reallocating space once devoted to cars—encouraging more people to walk, bike and take transit.

A New Way Forward
Envisioning a Transportation System without Carbon Pollution
The New Transportation Toolbox: Urbanization & Smart Growth
The New Transportation Toolbox: Shared Mobility
The New Transportation Toolbox: Public Transit
The New Transportation Toolbox: Reallocating Space
The New Transportation Toolbox: Smart Pricing
The New Transportation Toolbox: Walking & Biking
The New Transportation Toolbox: Information Technology
The New Transportation Toolbox: Autonomous & Connected Vehicles?

Figure 1: Impacts of automation on energy use

- Platooning
- Eco-driving
- Congestion mitigation
- Lower performance
- Improved crash avoidance
- Vehicle right-sizing
- Higher highway speeds
- Increased features
- Travel cost reduction
- New user groups
- Shared mobility services

% changes in road transport energy consumption due to vehicle automation
Synergies

FUTURE: CONFLUENCE OF TRENDS

Shared Mobility
Autonomous Vehicles
Electric Vehicles

Shaheen, 2015
Scenarios for Urban Transport Energy Savings

Figure 4. Vehicle-Miles Traveled per Capita in Scenarios, 2050.

Blue bars = reference case; Green bars = transformation scenarios

Frontier Group, A New Way Forward
Solutions Exist for All Cities
Pathways for Transformation

Building Up

Fixing Up

Linking Up

Syncing Up
Follow the Money

Government Capital Investment in Transportation Since 1956
(Billions 2014)

Source: Congressional Budget Office

- Highways: $5,509
- Mass Transit: $659
- Rail: $58
- Aviation: $605
- Water Transportation: $177
Follow the Money

State Spending on Public Transportation per Capita (FY 2014)

American Association of State Highway and Transportation Officials
50 Steps Toward Carbon-Free Transportation
Rethinking U.S. Transportation Policy to Fight Global Warming
Six Principles

- Climate concerns should inform every transportation policy decision.
- Low-carbon transportation should be at the front of the line for public funding.
- People should be rewarded for making low-carbon transportation choices.
- Carbon-intensive vehicles and fuels should be phased out.
- Public policy should encourage climate-friendly communities.
- Public policy should foster innovation.
What Now?

Short-term

• Climate change in environmental reviews.
• Fuel economy and GHG standards, plus California/state authority.
• Infrastructure
Cities and States
Discussion
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