Air Quality and the Cummins Highway Reconstruction

July 21, 2021
Welcome! ¡Bienvenidos! Akeyi!

- Si hablas español y prefieres escuchar la reunión en esta lengua utiliza el botón de “Interpretation” (Interpretación) para acceder al canal de audio en español.

- Si w pale Kreyòl Ayisyen e w prefere tande reyinyon an nan lang sa a tanpri sèvi ak bouton "Interpretation" (Entèpretation) pou w jwenn aksè ak chèn odyo pou Kreyòl Ayisyen an.
Welcome! ¡Bienvenidos!

● This meeting will be recorded.
  ○ Esta reunión será grabada.

● Update your name in Zoom to include your preferred name and your pronouns.
  ○ Actualiza tu nombre en Zoom con tu nombre preferido y tus pronombres.

● Your microphones are turned off to start. You will need to unmute to speak.
  Joining via phone? Press *6 to unmute.
  ○ Tu micrófono está apagado al empezar. Tendrás que reactivarlo para hablar.
  ¿Participando por teléfono? Presiona *6 para reactivar el micrófono.

● You can use non-verbal feedback options. Raise your hand or leave a message in
  the chat box if you have a question. If you called into the meeting, use *9 to raise
  your hand.
  ○ Puedes utilizar las opciones de reacción no verbales. O dejar un mensaje en el chat si
  tienes alguna pregunta. Si estás llamando por teléfono usa *9 para levantar la mano.
Hello! ¡Hola! Bonjou!

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MEETING GOALS

• Share the ways the City of Boston is working to improve air quality within the City.
  ○ What is the Boston Air Pollution Control Commission? What do they do?
  ○ Connections between transportation and air quality
  ○ Initiatives to improve air quality for residents of Boston

• Discuss the Cummins Highway reconstruction and how it can help improve air quality in the long term
  ○ What is a reconstruction? And timeline
  ○ The connection of Cummins Highway to air quality
  ○ Your input for the future of Cummins
The Air Pollution Control Commission within the City of Boston Environment Department reviews, permits, and regulates activities that relate to air quality and noise, including:

- parking in the parking freeze areas and idling,
- abrasive blasting and chemical cleaning of buildings, and
- open burning and smoke from industrial sites.

In Mattapan, we respond to noise and pollution complaints, requests for anti-idling signs, and provide clean air grants and information about zero emission vehicles.

Earth Day Clean-Up at Mattahunt Woods
The Environment Department works to enhance the quality of life in Boston by protecting our air, water, and land resources and addressing climate change. Our team also takes action on climate change. Boston is committed to reducing the carbon pollution that contributes to climate change and preparing for its impacts. We want to build a more sustainable, resilient, and healthier city now and for future generations of Bostonians.

**CITY OF BOSTON ENVIRONMENT DEPARTMENT**

- **Carbon Free Boston:** Reducing greenhouse gas emissions and air pollution
- **Climate Ready Boston:** Preparing for heat, sea level rise and flooding
- **Zero Waste Boston:** Increasing waste reduction, reuse, recycling & composting
CUMMINS HIGHWAY RECONSTRUCTION

What you see on Cummins now is a temporary redesign to slow speeding drivers and improve safety for all users while we work on the design of the Cummins Highway Reconstruction.

Visit boston.gov/cummins-highway for more information on safety data and comments we have been collecting to inform this project.
Cummins Highway hasn’t been updated since the **spring of 1955**.

The street cars that ran along Cummins were removed in 1953 to make room for cars.

The street’s layout reflects the priorities of the 1950’s: enable non-residents to drive quickly through our neighborhoods.

**WHY A RECONSTRUCTION?**
CUMMINS HIGHWAY RECONSTRUCTION

During a reconstruction project we completely rebuild the street, including sidewalks, curbs, street lights, traffic signals, road pavement, and replace or update utilities as necessary.

The City has budgeted approximately $12 million for reconstruction of Cummins Highway.
CUMMINS HIGHWAY RECONSTRUCTION

We cannot produce a design without your input. You will help shape how Cummins should be for the next 70 years.

Currently, we are doing community outreach to inform the final design. We have not begun the engineering work to design the corridor.
Advance Go Boston 2030 goals:
- Improving safety on our streets
- Reducing emissions
- Investing in communities to achieve equity in access to opportunities
CUMMINS HIGHWAY RECONSTRUCTION OPPORTUNITIES

- **Advance Go Boston 2030 goals**
- **Partner with other City departments to advance our collective plans:**
  - To inform residents of the work happening around the City
  - To improve collaboration in our work and achieve neighborhood and citywide goals
CUMMINS HIGHWAY RECONSTRUCTION OPPORTUNITIES

- Advance Go Boston 2030 goals
- Partner with other City departments to advance our collective plans

Collaboration with residents to advance your goals:
- Awareness and participation in efforts that you care about
- Confirm your vision for the future through our projects
### TIMELINE OF CUMMINS HIGHWAY RECONSTRUCTION PROJECT

#### Engagements
- **Jun., 2021 - Ongoing**
  - Design for Cummins Reconstruction

#### Design Trials
- **Design Trial (Phase 1)**
  - **Jul. - Oct. 2020**
- **Design Trial (Phase 2)**
  - **Oct. 2020 - ongoing**

#### Public Meetings
- **Apr. 11, 2019**
  - 1st public meeting at Mattahunt
- **Feb. 27, 2020**
  - 3rd public meeting at Mattahunt
  - *Presented design concepts*
- **Oct. 29, 2019**
  - 2nd public meeting at Mattahunt

#### Engagements
- **Jun., 2021 - Ongoing**
  - Engagement for the design of Cummins Reconstruction
  - **June:** Special T-Talk - Arrested Mobility with Mattapan Food & Fitness
  - **July:** Urban Resilience
  - **July:** Air Quality
  - **August:** Land Use
  - **September:** Lighting
  - **September:** Green Infrastructure
  - **October:** Public Health
  - **November:** TBA
Air pollution in Boston
Suffolk County (where Boston is) is the most polluted county in Massachusetts. Concentration of pollution from on-road vehicles is **88% above** the state average.
INEQUITABLE EXPOSURE TO AIR POLLUTION

- Children, older adults, people with pre-existing conditions, low-income communities and communities of color are among those at higher risk for health impacts associated with living near busy highways and sites where pollutants are emitted from multiple sources.

- In MA urban areas, air pollution disproportionately burdens people of color, individuals with lower educational attainment, and households with an annual income of less than $20,000.

- A 2018 Asthma and Allergy Foundation of America report ranked Boston fourth nationally for asthma prevalence, with asthma rates at 10.2 percent for adults and 12.9 percent for children.

Source: Greenlink Equity Map, CDC 500 Cities

Adult Asthma Rates in Boston
Traffic contributes to climate change and poor air quality.

Greenhouse gas (GHG) emissions from transportation account for about 30% of Boston’s total emissions, around 65% of which comes from passenger vehicles.

Figure: Transportation emissions by mode of travel in 2016. Source: BU Institute for Sustainable Energy model calculations.
TRAFFIC CONTRIBUTES TO CLIMATE CHANGE

The typical passenger vehicle emits about **4.6 metric tons of carbon dioxide per year.**

Source: Carbonvisuals.com
PRIVATE VEHICLES DRIVE AIR POLLUTION

- Motor vehicle exhaust contributes to the formation of ground-level ozone. It contains toxic air pollutants that harm our health.
  - Motorized road traffic is a major source of nitrogen dioxide (NO2). NO2 is a highly reactive gas that irritates the respiratory system and can lead to reduced lung function, asthma, increased inflammation of the airways, and other health conditions.
  - Vehicle traffic also emits the following pollutants: carbon monoxide, particulate matter, volatile organic compounds, black carbon, and more.

- Air pollution also results from tire wear, brake wear and road abrasion.
  - 85% of PM2.5 pollution comes from tire wear.
Exposure to elevated levels of particulate matter (PM) 2.5 can exacerbate lung and heart ailments, cause asthma attacks or lung cancer, and lead to both increased hospitalizations and mortality from cardiovascular diseases.

Exposure to ozone can cause respiratory issues and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.

Air pollution from traffic congestion in 83 of the nation’s largest urban areas contributes to more than 2,200 premature deaths annually (Harvard School of Public Health).
Exposure to particulate matter from on-road transportation by demographic:

- **Asian Americans** are exposed to **36% more** than white residents
- **African Americans** are exposed to **34% more** than white residents
- **Latinos** are exposed to **26% more** than white residents
WHAT DOES THIS MEAN FOR PEOPLE USING CUMMINS HIGHWAY?

- Traffic on “arterial” streets, like Cummins Highway, can cause similar levels of noise and air pollution to major freeways -- or even greater levels depending on traffic conditions.

- The combination of rush hour and calm winds in the morning often leads to the highest concentrations of emissions occurring during morning rush hour.

- The reconstruction project must include design elements to help improve air quality.
Street design and air quality
Evidence suggests that lower speeds likely has a negligible impact on air quality or even a slight improvement.

Expanding active transportation also supports increased air quality. Lower motorized vehicle speeds have been tied to increases in walking and biking.

While the primary benefit of lower speeds is related to reduced risk of collisions and traffic fatalities, limited evidence suggests that it can also benefit air quality.

- Additional monitoring and research is needed to better understand how roadway design choices affect air quality.

- We are exploring deploying air quality sensors to better understand how air quality improves over time in this area.
ROADWAY RE-DESIGN CAN IMPROVE AIR QUALITY

Near-road mitigation strategies can be critical to reducing traffic-related pollutants and protecting the public from air pollution.

Roadside vegetation and noise barriers can reduce downwind pollution concentrations near roadways by altering air flow and intercepting pollution.

- For example, roadside vegetation can be most effective at reducing air pollution when barriers are thick, with full coverage from the ground to the top of the canopy, and extend or wrap around an area, so that pollutants cannot flow around the edges.

Expanding active transportation modes can also help to close gaps in health inequities.

Source: Air Quality At Street-level: Strategies For Urban Design, BRA 1984
Walking, biking, riding transit or carpooling all emit less than driving alone.

Electric vehicles reduce emissions, but they don’t eliminate them.

25 people riding in a train car emits around a third as much as 25 people driving alone.

Source: Union of Concerned Scientists
VEHICLE FUEL STANDARDS

- The U.S. DOT has set fuel economy standards for cars and trucks since 1975, also known Corporate Average Fuel Economy (CAFE) Standards.

- The purpose of CAFE is to reduce energy consumption and emissions by increasing the fuel economy of cars and light trucks.

- The average fuel economy of vehicles registered in Boston has improved over time, but vehicle miles traveled have increased over time, resulting in increased transportation emissions. As a result, transportation emissions have not decreased over time.
Initiatives to improve air quality
**Recharge Boston** is the City’s initiative to support the adoption of zero emission vehicles (ZEVs), like electric vehicles, with how-to guides, information about incentives, and the deployment of public electric vehicle charging stations across the City of Boston.

- EV charging station under construction in the municipal lot located at **451-467 River Street**
  - Charging at municipal lots is $0.25/kWh (e.g., it would cost $7.50 for a 100-mile charge on a 2020 Chevy Bolt).

- EVs can reduce urban air pollution, but they still contribute to road abrasion, tire wear and brake wear, which generate non-exhaust traffic emissions and contribute to adverse health effects.
  - We need to shift from single occupancy vehicles to shared and active modes as much as possible.

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**Electric vehicle chargers in Mattapan**

*Source: PlugShare*
Large project review developments must equip 25% of their total parking spaces to be EVSE (electric vehicle supply equipment) installed and the remaining 75% of the total spaces to be EV (electric vehicle) ready.
Massachusetts initiatives:

- **Volkswagen settlement**: Massachusetts received $75 million to reduce nitrogen oxide and greenhouse gas emissions, while supporting transportation electrification.

- **Massachusetts Electric Vehicle Incentive Program (MassEVIP)**: Grants for electric vehicle purchases by public entities and installation of charging infrastructure at apartments, workplaces and more.

- **MOR-EV**: Consumer rebates of up to $2,500 for the purchase or lease of battery electric vehicles and fuel-cell electric vehicles and up to $1,500 for plug-in hybrid electric vehicles.

- **Diesel emissions reduction act (DERA)**: The (DERA) Program funds grants and rebates that protect human health and improve air quality by reducing harmful emissions from diesel engines.
BOSTON DIESEL EMISSIONS REDUCTION ORDINANCE

On June 3, 2015, Mayor Martin J. Walsh signed “An Ordinance to Protect Air Quality throughout the City of Boston by Reducing Fuel Emissions,” to help reduce harmful diesel emissions. As of December 2020:

- All vehicles and diesel equipment owned, leased or operated by the City of Boston are powered by ultra-low-sulfur diesel fuel.
- 94% of City vehicles complied with post-2007 EPA standards or have been retrofitted with emission-reduction equipment.
- BPS has transitioned 57 percent of the school bus fleet from diesel to propane buses that emit far less pollution.
DOCTORS can refer residents with asthma for a home inspection conducted by the Boston Inspectional Services Department (ISD).

- Boston residents with asthma may make self-referrals by calling our Breathe Easy Coordinator at 617-534-5966 or emailing asthma@bphc.org.

ISD inspects homes for possible violations of the Sanitary Code:

- Mold, chronic dampness and water leaks
- Cockroach and mice infestations
- No heat, drafty doors and windows, and poor ventilation
- Damaged carpeting

Landlords will have 24 hours to 30 days to correct any issues identified in the inspection.
COMMUNITY CLEAN AIR GRANTS

This pilot grant program will fund and bring visibility to community-driven projects that reduce air pollution and carbon emissions. Projects should:

- Eliminate or otherwise address point sources of air pollution within Boston;
- Mitigate the negative health impacts of air pollution emissions within Boston;
- Enhance the ability of local communities in Boston to improve local air quality; or
- Have a measurable impact on air quality or carbon emissions within Boston.

APPLY TODAY TO THE COMMUNITY CLEAN AIR GRANT!

The grant program provides funding for community projects to reduce air pollution and carbon emissions. This opportunity helps improve public health and combat climate change on a local level.

MORE HERE
Boston.gov/clean-air-grant
COMMUNITY CLEAN AIR GRANTS

The program has $350,000 for individual grants, each up to $50,000 that can be awarded to non-profit organizations, businesses or individuals with projects that abate air pollution, accepting applications on a rolling basis.

Applications are available and can be reviewed in English, Español (Spanish), Kreyòl ayisyen (Haitian Creole), 繁體中文 (Traditional Chinese), 简体中文 (Simplified Chinese), Tiếng Việt (Vietnamese), and kriolu (Cape Verdean Creole).

For more information: boston.gov/clean-air-grant
Trains are running more frequently under a pilot program:
  ○ Trains run every 45 minutes and the last train from South Station leaves at 11 P.M.

Tap your CharlieCard at the platform validators. Get a receipt to show on board.
  ○ Same cost as a subway ($2.40)
  ○ Riders who pay with a CharlieCard can transfer for free, within 2 hrs of their first tap, to:
    ■ Red Line at South Station
    ■ Silver Line or local bus

FAIRMOUNT LINE: A RELIABLE OPTION IN MATTAPAN
TRANSIT OPTIONS IN MATTAPAN

Bus Route 30 (on Cummins):
- Service levels reduced at the beginning of the pandemic.
  - Brought to pre-pandemic levels in September 2020.
- Currently at 90% because there are not enough operators.

Routes 28, 29, 31 (on Blue Hill Ave):
- All routes are back at pre-pandemic service levels.
- Some days still struggling to deliver 100% level of service.
  - MBTA is training new operators.
Scientific evidence suggests that lower speeds support active transportation and can benefit air quality, but additional data monitoring and further research are needed to better understand how roadway design choices affect air quality.

Air quality sensors are increasingly low-cost and available. Different sensors are able to measure different types of pollution:

- Optical sensors measure particulate matter (e.g., PurpleAir sensors, shown right)
- Electrochemical sensors: NO2, SO2, O3, NO, CO
- Photo ionization detectors: volatile organic chemicals
Your input for the future of Cummins Highway
We will continue to have conversations with you about the redesign of Cummins Highway. Your input during these discussions will be used to inform the design of Cummins and will be shared with other departments to inform their work as well.

In June we hosted a special edition of T-Talk with Charles T. Brown to discuss ways mobility of Black Americans is limited in the U.S. through police, policies, and polity.

Two weeks ago we talked about heat resilience with the Environment Department and the redesign on Cummins. During this conversation we heard:

- You would like us to take a look at adding more shade to the street for the redesign.
- You were concerned about the temporary redesign happening on Cummins and its impact on emergency services and traffic.
TODAY WE WOULD LIKE YOUR INPUT ON

To protect the public realm from pollution:

- Where does the air feel most polluted along Cummins Highway?
- Where should we be measuring air quality to quantify changes?
  - How would you like us to share this data with you? How would you like us to use it?
- Where, along Cummins Highway, is most important to you that we add green vegetation to provide a pollution barrier?
TODAY WE WOULD LIKE YOUR INPUT ON

To reduce traffic-related pollutants:

- Where do you see other people driving speed up and brake suddenly along Cummins Highway?
  - Where do you speed up and brake suddenly along Cummins Highway?

- What places near the corridor should we be looking at connecting safely via walking/cycling?
Resources and staying engaged
Outdoor Wi-Fi zone pop-ups provide seating, shade, and lighting 24 hours a day at Boston Public Libraries:

- **Mattapan Library** (1350 Blue Hill Ave)
  - Tuesday and Thursday, 9 - 11 a.m
    - Nutritious breakfast and lunch at no cost to youth 18 and under.
  - Tuesdays, 10 a.m. - 12 p.m.
    - Office hours for the Rental Relief Fund
- **Leaf and Yard Waste Drop-Off**
  - August 1, 2021 at 10 a.m. - 2 p.m.
  - 500 American Legion Highway

- **Household and Hazardous Waste Drop-Off**
  - August 14, 2021 at 9 a.m. - 2 p.m.
  - 244 Mt Vernon St, UMass Boston Bayside Lot, Dorchester

- **Heat Resilience Study**
  - Mattapan is one of 5 neighborhoods of focus
  - 2nd open house took place July 14, 2021
  - [www.boston.gov/departments/environment/preparing-heat](http://www.boston.gov/departments/environment/preparing-heat)

- **Pools and tot sprays open to keep cool in the heat**
  - [www.boston.gov/summer-boston](http://www.boston.gov/summer-boston)
Walker Playground

- Construction project is underway. Started at the beginning of June but it was wet the first few weeks. The work is progressing through demolition and utility work.

- For more information, contact Lauren Bryant:
  - 617-961-3019
  - lauren.bryant@boston.gov
Mattapan on Wheels
- Saturday, July 24th at 8 a.m. at Ryan's Playground (315 River Street)
  - Registration required bit.ly/MoW11

Beginner-friendly bike rides on the Neponset River Greenway
- Meet at Mattapan Square T stop.
- Monday nights at 5:30 p.m.

Tuesday Tune Ups with @That Bike Lady
- Every other Tuesday from 5:30 – 7:30 p.m.
  - July 20 @ Mattapan Library (1350 Blue Hill Ave)
  - August 3 @ Almont Park (40 Almont St)
  - August 12 @ Ryan’s Playground (350 River St)
Women’s Learn to Ride (boston.gov/women-bike)

- **Basic Skills**
  - July 28 at 6 p.m., Mattahunt Elementary School **FULL but you can sign-up for the waitlist**
  - August 11 at 6 p.m., Franklin Park Playstead
  - August 25 at 6 p.m., Franklin Park Playstead
  - September 11 at 10 a.m., Boston Water & Sewer
  - September 25 at 10 a.m., Boston Water & Sewer

- **Street Skills**
  - September 11 at 12 p.m., Boston Water & Sewer
  - September 25 at 12 p.m., Boston Water & Sewer
Environment Department

- Air Pollution Control Commission Hearing on August 11 at 1:00 p.m.
- Visit our website: boston.gov/departments/environment
- Contact us at: APCC@boston.gov
  - Or call us at 617-635-3850
- Reach out to Kat Eshel: katherine.eshel@boston.gov

Cummins Highway Reconstruction

- Land Use and Transportation Planning on August 17 at 6:30 p.m.
  - Register here: bit.ly/Cummins-Land
- Visit the project website: boston.gov/cummins-highway
- Reach out to Jeffrey Alexis: jeffrey.alexis@boston.gov

STAY IN TOUCH WITH US