

EZM

Emmett Z. McKinney

Design, GIS, and Research Portfolio

June 2020



# About

**Emmett McKinney** is an urban planner, designer, and optimist. His expertise lies at the nexus of multimodal transportation, public participation, and spatial data analysis. He has worked across sustainability disciplines, including energy, food, and climate resilience. In all areas he places equity first, and asks how technology can best be deployed to meet existing needs.

Emmett approaches planning issues as both global and local. A native of Los Angeles, Emmett has lived in Nashville, Washington, D.C., Boston, and Aix-en-Provence, France. He has collaborated on community development projects in Nashville, San Francisco, New York City, and Mexico City.

Emmett's practice takes root in the belief that communities hold essential knowledge to define and realize their own brightest future. Planners' work is to amplify this knowledge, offer technical skills to refine it, and apply it in the built environment. Cities are for all people; planning must therefore be an act of co-creation.

**Tech Skills:** Adobe CC, Arc & QGIS, SQL, R, HTML, CSS, SketchUp, CartoDB, Microsoft Office

**Social Skills:** Participatory Action Research, Policy Research, Legal Analysis, Writing, Project Management

French (Fluent) | Spanish (Proficient) | English (Native)

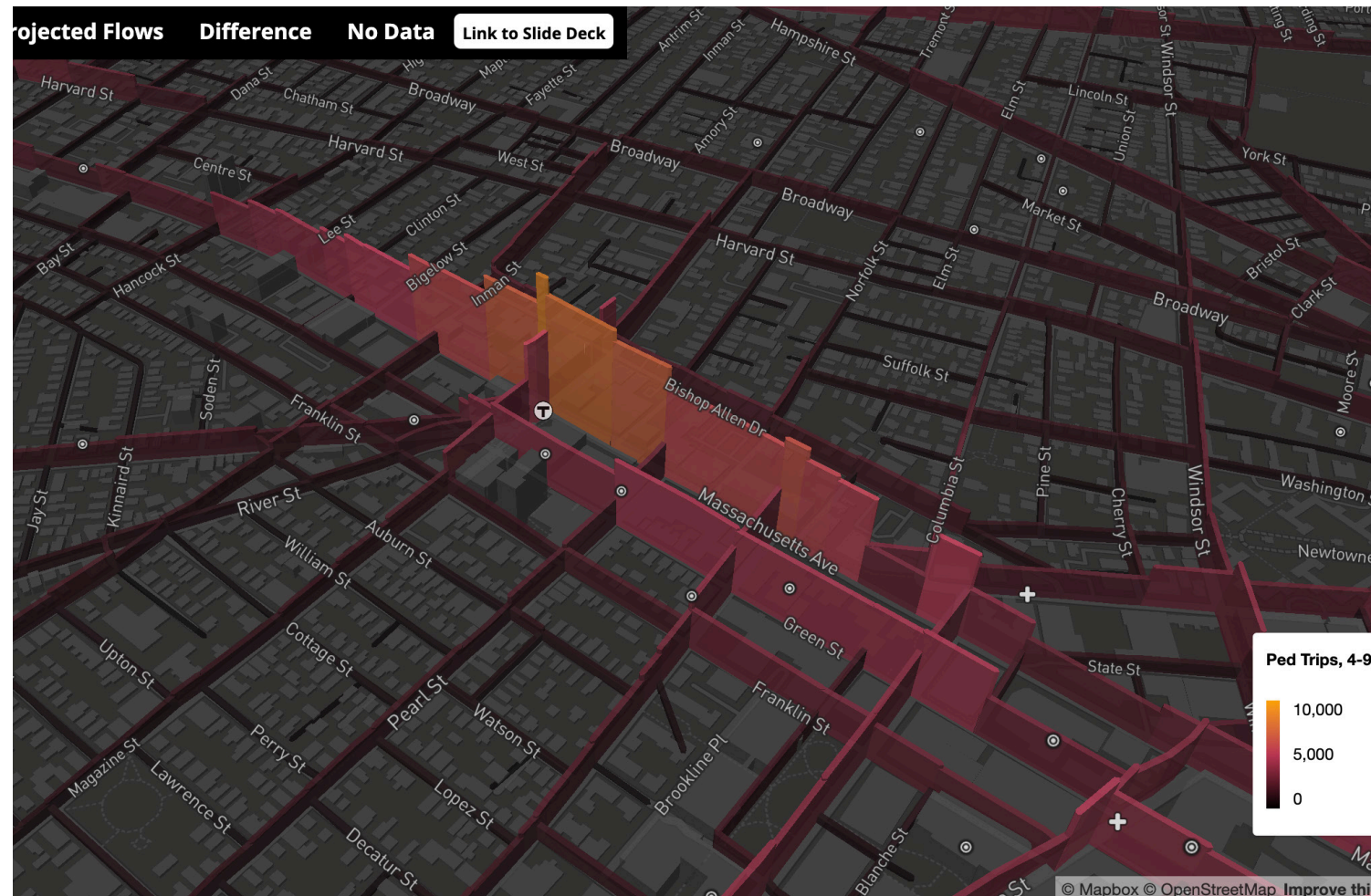
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Massachusetts Institute of Technology | Master in City Planning, 2020, Environmental Policy and Planning

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# Pedestrian Network Modeling | Cambridge, October 2019



Project for Urban Analytics class at MIT DUSP.

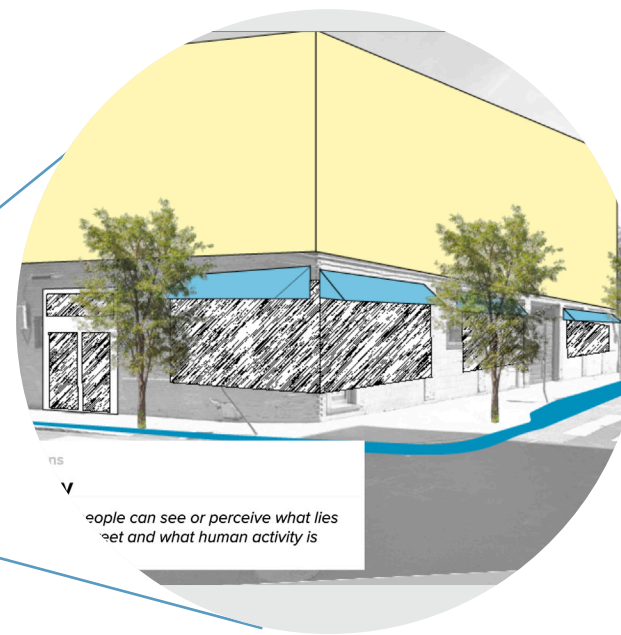
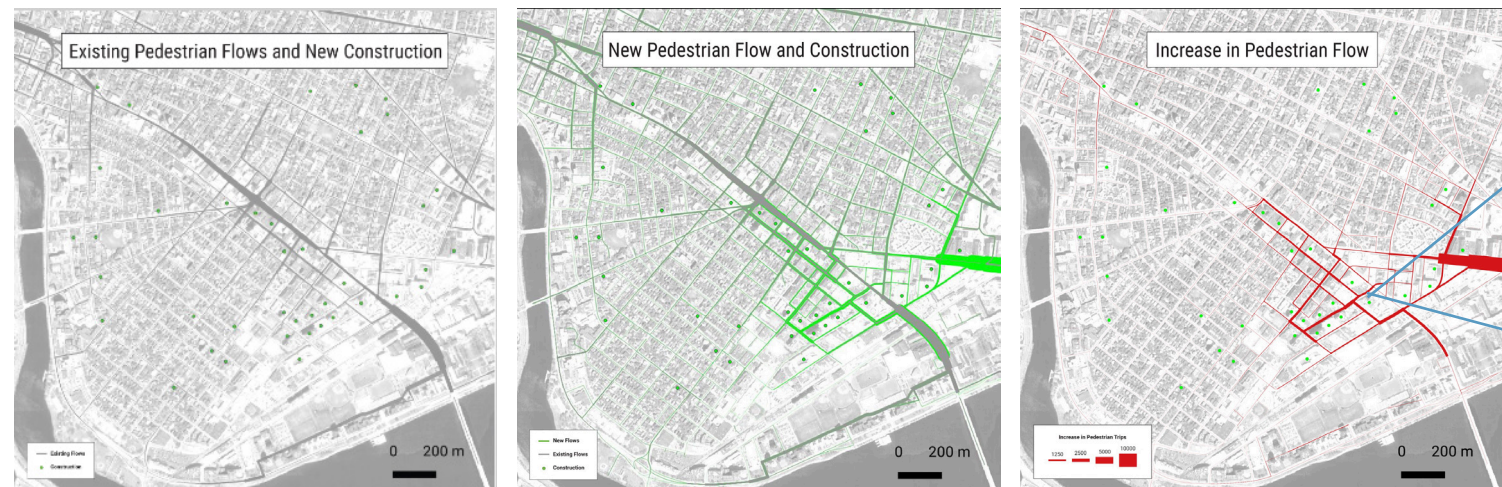
Using Urban Network Analysis Toolbox (Rhino extension), we modeled future pedestrian flows in Cambridge, based on current travel patterns, employment and residential data, transit infrastructure, and permitted developments. Findings were visualized using GIS and MapBox, and design interventions proposed at high-growth locations that are current unfriendly to pedestrians.

My role included data collection, modeling, and design recommendations. Full project at <https://walk.wrong.website>

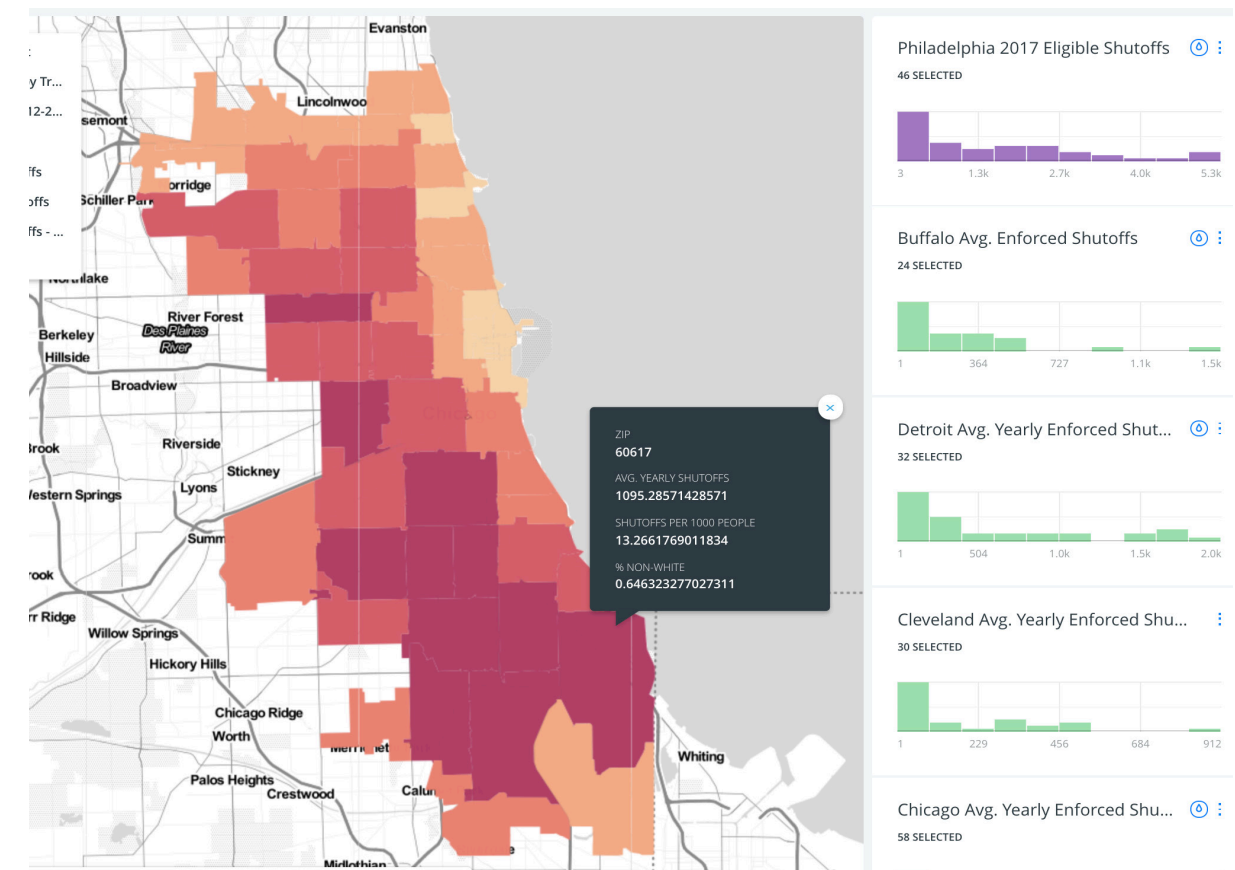
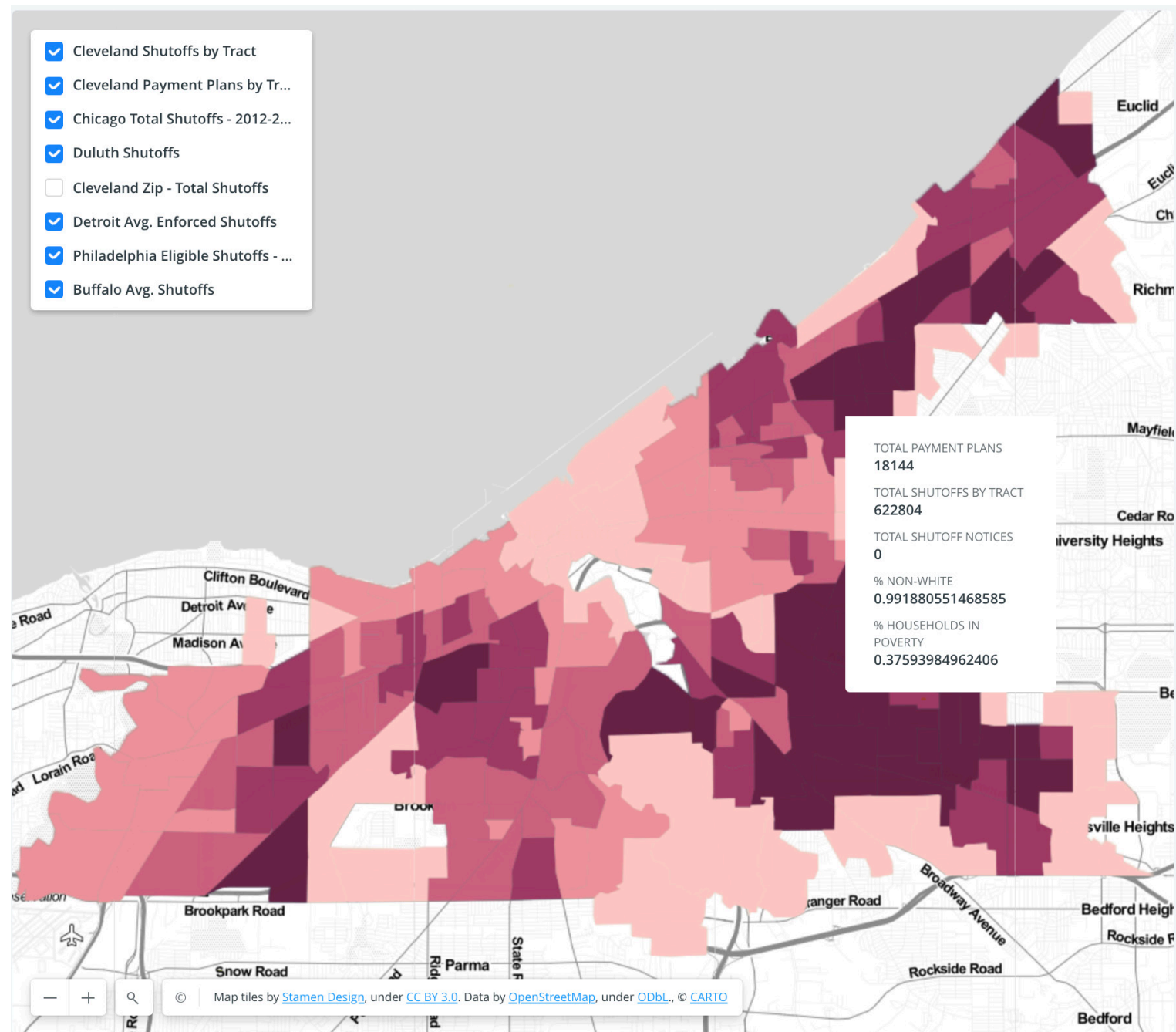
Left: High pedestrian traffic predicted along Massachusetts Avenue & Green Street.

Below: High-growth corridors visualized in QGIS.

Right: Design intervention proposed at Lansdowne Street.



# Mapping the Water Shutoff Crisis | June 2020



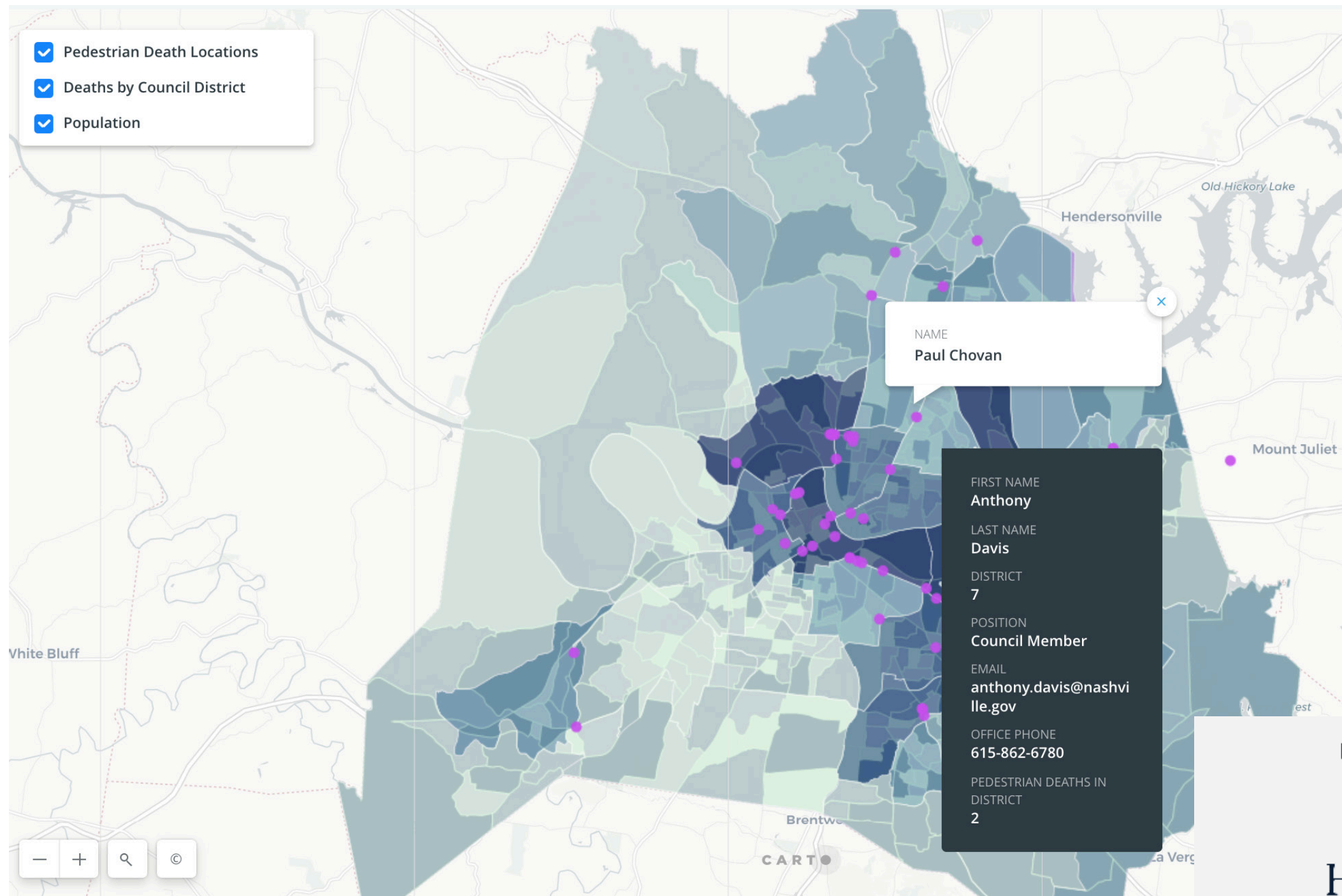
The United States is experiencing a crisis of water affordability. As cities take on needed infrastructure upgrades, low-income communities of color have paid the price through increased water rates and water shutoffs. The MIT American Water Shutoffs project develops approaches for cities to meet their financial needs while protecting low-income communities' access to water: a basic human right.

Left: Web-based visualization of data collected by WBEZ Chicago and American Public Media. These maps to identify hot-spots for water shutoffs in Cleveland (left) and Chicago (above), along with the resulting racial and economic disparities.

Full map at [bit.ly/Midwest\\_H2O](https://bit.ly/Midwest_H2O)

More on the project at [www.americanwatershutoffs.mit.edu](http://www.americanwatershutoffs.mit.edu)

# Pedestrian Death Registry | Nashville, July 2019



Nashville, Tennessee is a dangerous city for pedestrians, with 33 killed in 2019. The Nashville Pedestrian Death Registry is a community-led effort to record the stories of each victim. The list is available at: <https://www.nashvillepedestriandeathregistry.org/>

This web map, created using CartoDB, is a tool for social engagement, showing the density of deaths in each council district, along with the information users need to contact their representative.

Full map at [http://bit.ly/nash\\_ped\\_map](http://bit.ly/nash_ped_map)

*Left: Nashville Pedestrian Death Registry Webmap, created for Music City Riders United. Mouse-over of council districts and census tracts helps users place death in context and know who to contact.*



NASHVILLE PEDESTRIAN DEATH REGISTRY

home about us  
the registry  
contact donate

THE REGISTRY

## Honoring the Lives of those We've Lost

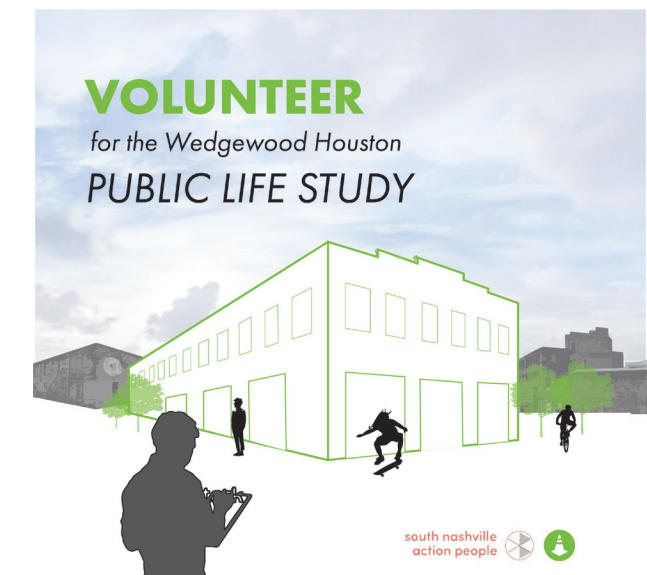
# Public Space / Public Life Study | Nashville, July 2019



This study examines how pedestrians, cyclists, and other active street users interact with public space in the Wedgewood Houston (WeHo) neighborhood during a monthly art crawl. Using pens and clipboards, volunteers recorded pedestrian traffic at each corner for one 10-minute period each hour plus 2 additional counts, for a total of 6 samples per corner. Each time a pedestrian crossed a plane shown on the map, they were counted once.

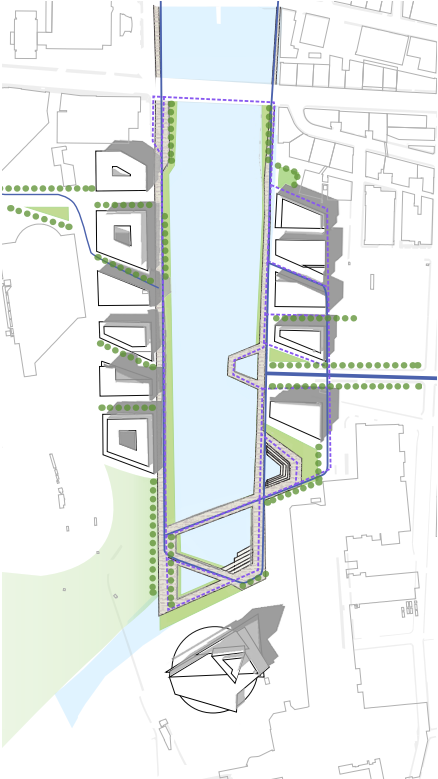
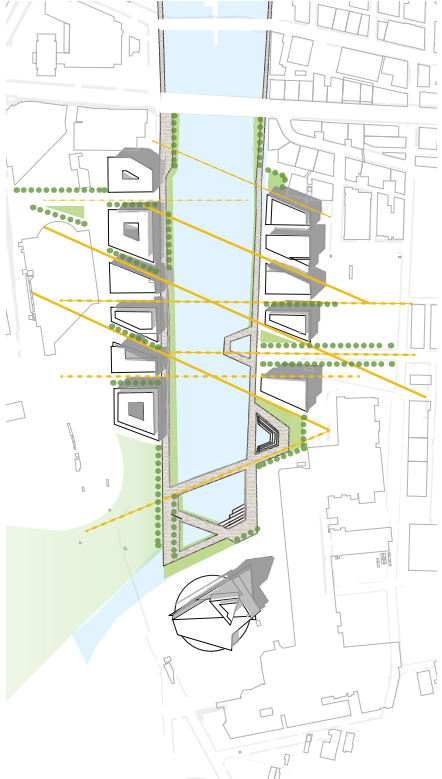
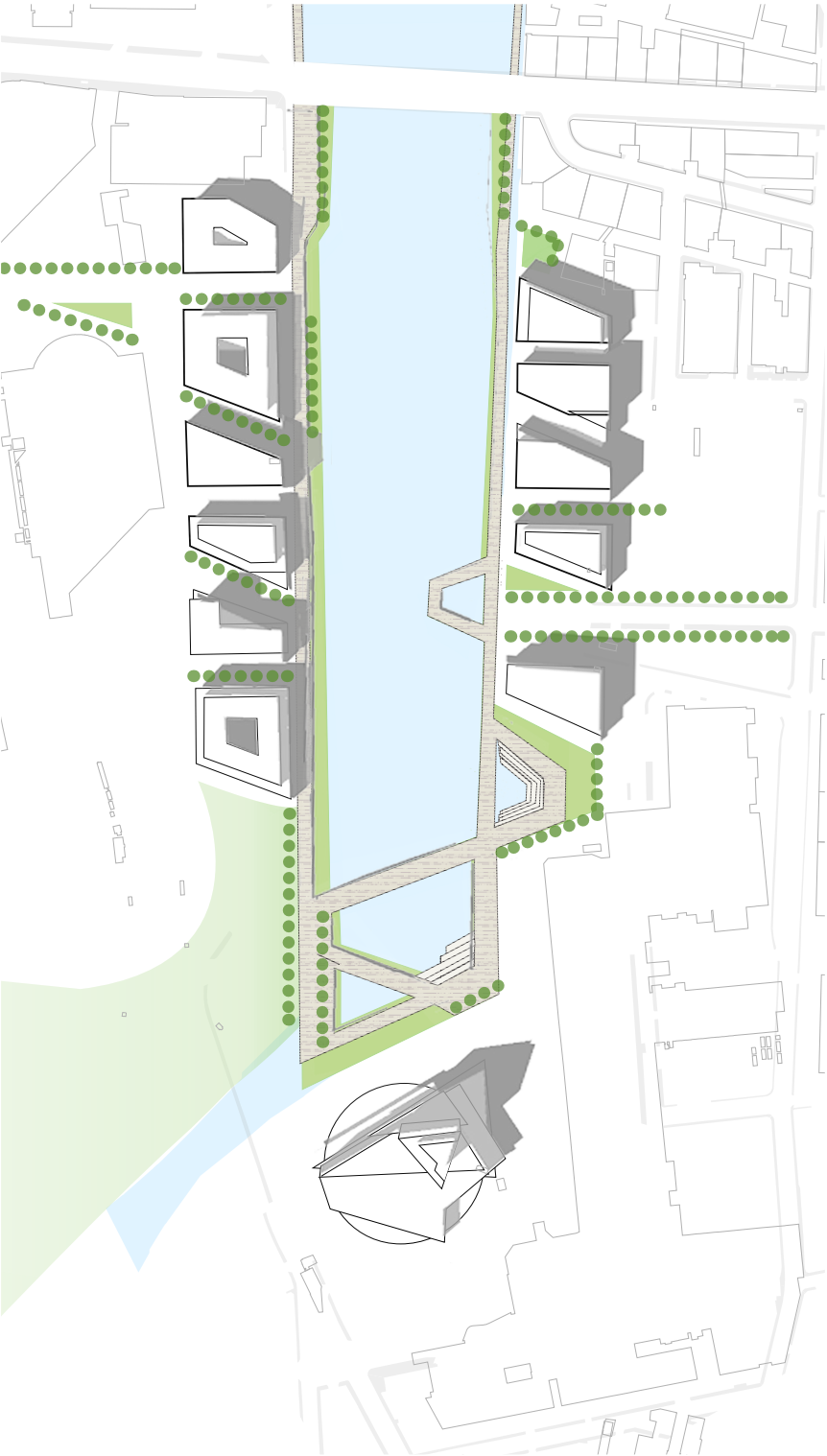
Intersections with art galleries and bars experienced the heaviest foot traffic. Pedestrians were evenly distributed across the four zones at the beginning of the night. After sunset, they shifted heavily towards Houston Street, where there was a live band and food trucks. Intersections next to parking lots saw high traffic, suggesting that many attendees arrived by car. Intersections facing the neighborhoods, such as Martin St. & Merrit Ave and Chestnut Street & Hagan recorded much less foot traffic, hinting that few people walked from nearby.

Left: GIS visualization of pedestrian traffic data by time and location. Below: Graphic to engage volunteers





# Return to the Waterfront | Boston, May 2019



Sight Lines

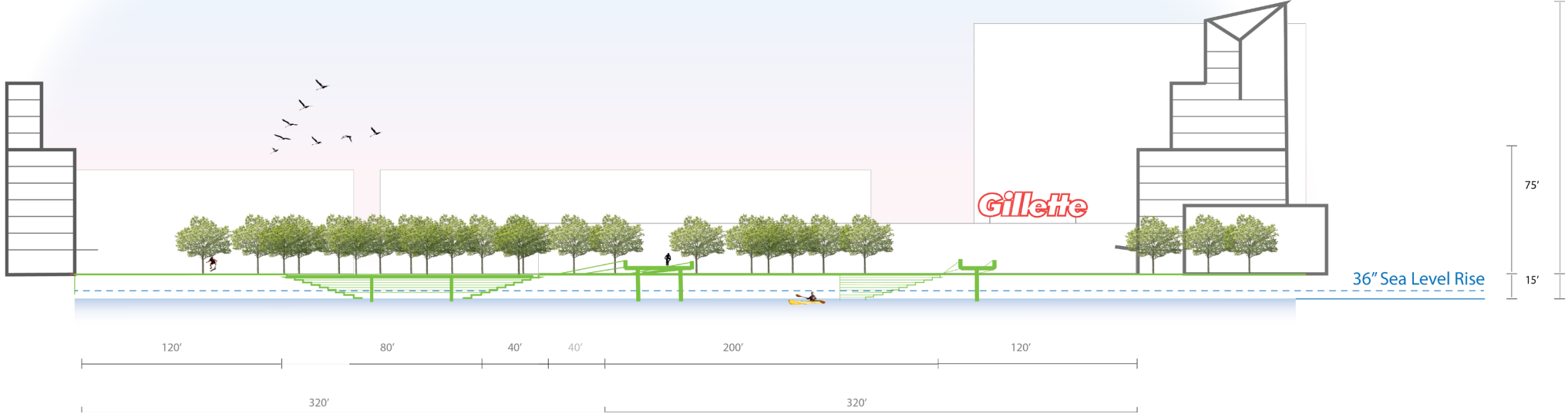
Pedestrian & Bikeways

Fort Point is a place of connection and creation. The channel stitches together Boston and the Seaport, and hosts significant industry as well as a vibrant arts community. As an interior waterway, it also plays an essential role in Boston's climate resilience. However, vast impermeable surfaces now expose the area to flood risk, while restricted pedestrian and bike access curbs its usage as a public space. Project for class at the Harvard Graduate School of Design.

Left Site plan, with details of sight lines and pedestrian & bike connections.

Below: Section of waterfront park and proposed development.

Right: 2050 sea level rise projections.



# Return to the Waterfront | Boston, May 2019



*Vision for an inclusive waterfront.*

# North Nashville Greenway | Nashville, August 2019



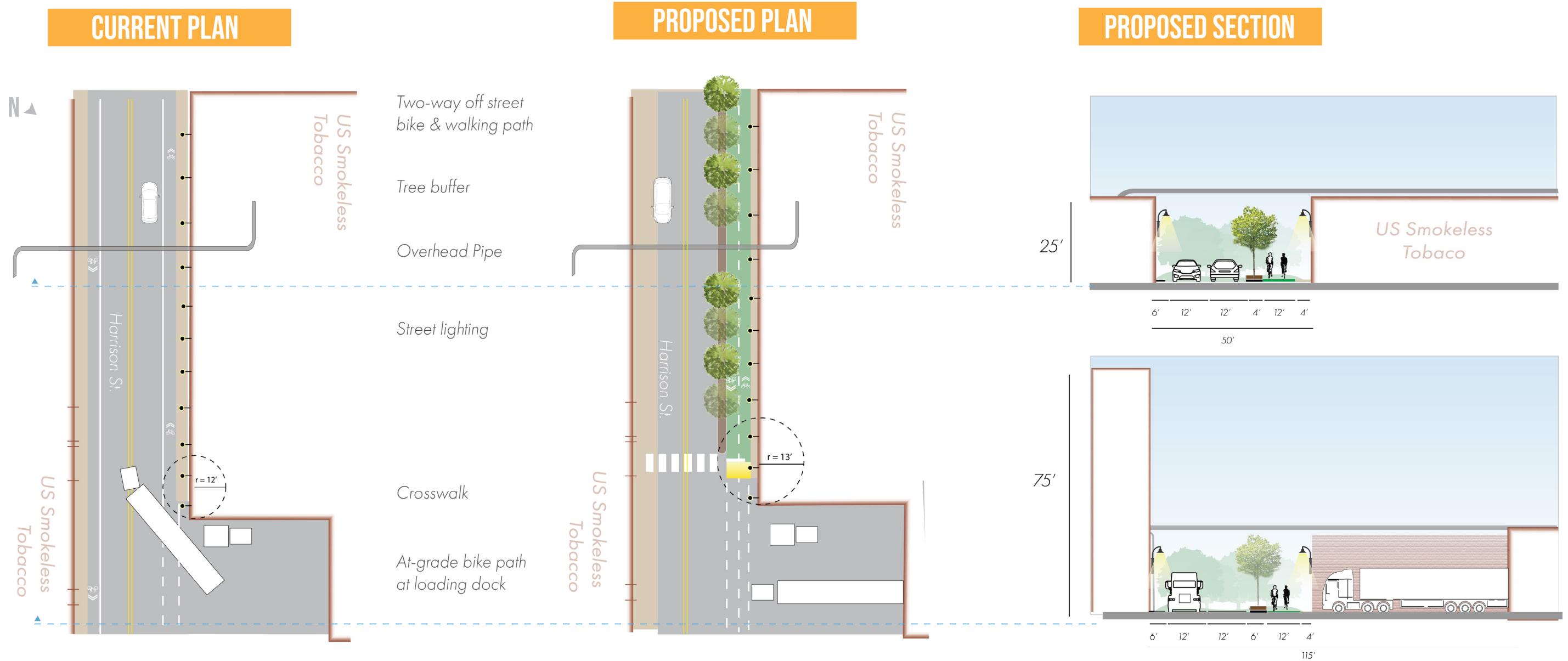
North Nashville is the cultural heart of the city. Though this historic neighborhood is located just one mile from downtown, it is poorly served by pedestrian, bike, and transit infrastructure. The *Drum Line* proposes to re-purpose an abandoned rail line as a multi-use path, which pays homage to the neighborhood's industrial history, prestigious historically black universities and the famous rock & roll clubs, marching bands, and jazz clubs that gave Music City its name.

Top: A re-routed bus line, protected bike lane, bike share station, and mural create a multi-modal hub.



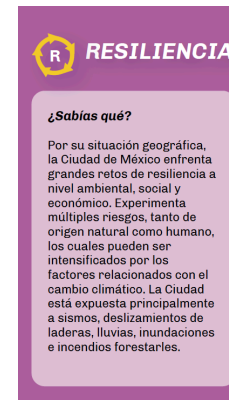
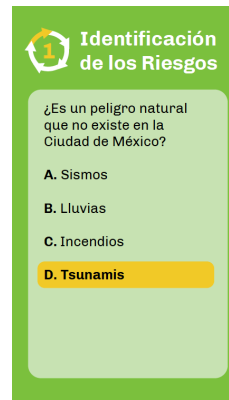
Below: The rail crossing at Clifton Avenue, with an existing mural, creates a dramatic viewpoint that provide valuable public gathering space.

# North Nashville Greenway | Nashville, August 2019



Plan and section of how protected bike path would navigate existing industrial use.

# Resiliencia Participativa | Mexico City, January 2020



In collaboration with la Secretaria Gestion Integral de Riesgo y Protección Civil de la Ciudad de Mexico, I and a collaborator developed the concept and materials for a board game on climate resilience. Mexico City faces many risks, including earthquakes, subsidence, water scarcity, flooding, and pollution. *La Gran Aventura de la Ciudad* relays the spatial distribution of these risks, key information for building resilience, and facilitates trust-building between marginalized communities and local authorities, while integrating cultural landmarks and a color scheme inspired by the city itself.



Gameboard (left), Trivia cards (top), Facilitator's Guide (middle), presentation to the Secretary of Resilience (right).

# Tactical Urbanism Organizers Guide | Nashville, February 2020

## BUS STOP IMPROVEMENTS

### DESCRIPTION

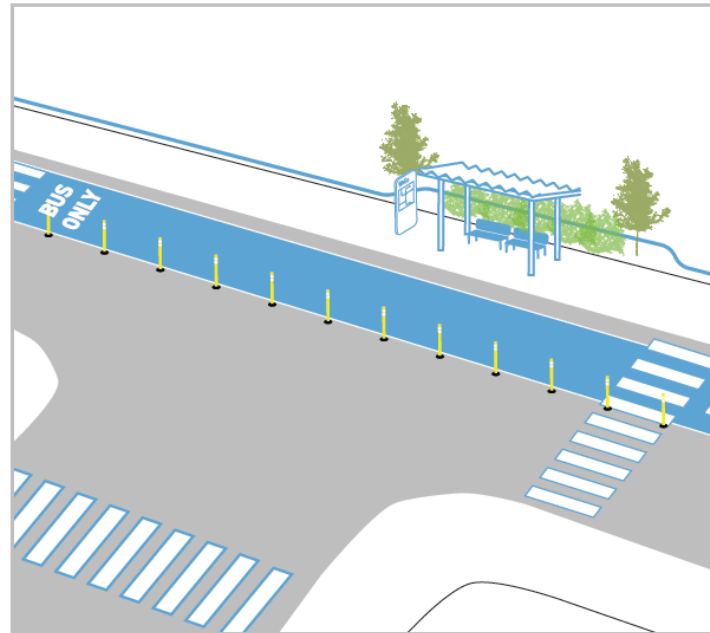
A designated location where public buses stop. Can be enhanced through including a shelter, seating, signage, plants, and clear access to and from the stop.

### PURPOSE

Bus stops, particularly when well designed with sufficient amenities, can encourage bus usage and ridership. When strategically incorporated with other design features bus stops can support traffic calming efforts.

### RECOMMENDED LOCATIONS

Any bus stop, especially those lacking seating or shelter, or which are heavily used. Crosswalks should be located behind the bus stop, so that passengers can stay out of the path of the bus as it departs. Bus stops can also be integrated with pedestrian islands, allowing bikes to pass behind. "Hanging" bus stops also facilitate seamless board-



Dedicated bus lanes make bus stops more efficient, as the stop remains clear from cars., and the bus need not merge lanes to pick up passengers.

### ESTIMATED COSTS AND MATERIALS

Length of Installation	Cornstarch Paint	Paint	Pavement Tape	Planters*	Delineators*	Signage*	Art*
Day	\$0.27 per sq ft	Not advised	Not advised	\$70 each, every 5 feet	\$40 each, every 5 feet	Strongly advised	Advised*
Week	Not advised	Pending context, \$0.10 per sq ft	\$1 per linear foot	\$70 each, every 5 feet	\$40 each, every 5 feet	Strongly advised	Advised*
Month or Longer	Not available	Pending context, \$0.10 per sq ft	\$1 per linear foot	\$70 each, every 5 feet	\$40 each, every 5 feet	Strongly advised	Strongly advised*

\*Pending design, scale, and longevity of installation

CATALOG: COMPONENTS 25



Tactical Urbanism Organizers (TURBO) is an initiative of the Nashville Civic Design Center, which empowers communities to improve local infrastructure, using low-cost, 'tactical' interventions. These often lead to permanent improvements.

The TURBO Guide is a resource to envision improvements that could benefit a given neighborhood, see examples in action, and estimate the costs and materials required to bring these changes to life.

Led the design and layout of all interior graphics, researched material costs, and wrote the text. Available at [https://issuu.com/civildesigncenter/docs/turbo\\_catalog\\_final\\_2.24.2020](https://issuu.com/civildesigncenter/docs/turbo_catalog_final_2.24.2020)

Left: Example bus stop improvements, with description and estimated cost. Below left: Materials with icons and estimated costs. Below right: actual installment of traffic circle. Right: Cover art (done by a colleague).



#### BISTRO LIGHTS

\$35.00 - PER STRING  
\$45.00 48 FT STRING WITH SHATTER-PROOF WARM L.E.D. BULBS



#### 4 INCH PAVEMENT MARKING TAPE

\$1.00 PER LINEAR FOOT  
FOIL-BACKED VINYL, REFLECTIVE, SAND-COATED



#### TEMPORARY SIDEWALK PAINT (1-2 DAYS)

\$0.27 PER SQUARE FOOT  
POWDERED CORNSTARCH, FOOD COLORING, WATER



#### TEMPORARY SIDEWALK PAINT (7-14 DAYS)

\$6.00 PER 16 OZ. CAN  
SPRAY OR AEROSOL INVERTED MARKING PAINT



#### LONG-TERM PAINT (6 MONTHS OR MORE)

\$23.00 PER GALLON  
STRIPING LATEX PAINT

CATALOG: MATERIALS 13

## 15TH AVE. & ELMWOOD TRAFFIC CIRCLE

### BELMONT-HILLSBORO

In March 2017, the Belmont-Hillsboro neighborhood sought TURBO's help in constructing a temporary traffic circle at the intersection of 15th Avenue and Elmwood Street. Nestled between Belmont Boulevard and 12 South, the historic neighborhood is within easy walking distance of many businesses and parks. However, few of its intersections feature protection for walkers and cyclists. Drivers often sped through the neighborhood connecting the two commercial corridors, making it dangerous for walking or biking in the area.

This week-long installation used sandbags, planters, temporary paint, signs, and reflective bollards to define a traffic calming island. Data collected during the project informed Metro's design and implementation of a permanent traffic circle at the intersection, which was completed in April 2019.

FOOTPRINT: ~3600 SQ FT  
TOTAL COST: 1600  
MATERIAL COST: \$400.00  
ADDITIONAL COST: TRAFFIC CONTROL  
DURATION: 1 WEEK

Total cost incorporates NCDC Staff Time, which includes public engagement, design services, permit application, installation assistance, evaluation, and deconstruction.



Volunteers install the TURBO traffic circle, with traffic control help from the Metro Police department.

32 INSTALLATIONS: 15TH B

# Downtown Bike & Scooter Corrals | Nashville, August 2019



Metro Nashville Public Works collaborated to make downtown streets safe for cyclists, scooter riders, pedestrians, and other non-vehicle users. Commissioned by Lyft, 3M, and the city, these graphics convey safety information to riders, offer a safe space to park and ride, and offer pedestrians a refuge to cross the street -- with a bit of local flair.

Top: Alternate graphic concept. Left: adopted corral. Below: installed scooter corrals on 2nd Ave. S, and 4th Ave. S. in Nashville, TN.



# Research & Other Media |

## Transportation

Thesis: *Code Shift: Data, Governance, and Equity in Los Angeles's Shared Mobility Pilots*

## Water

Swain, M., McKinney, E., & Susskind, L. (2020). Water Shutoffs in Older American Cities: Causes, Extent, and Remedies. *Journal of Planning Education and Research*, doi.org/10.1177/0739456X20904431

## Energy

Maki, A., McKinney, E., Vandenberg, M.P. et al. Employee energy benefits: what are they and what effects do they have on employees?. *Energy Efficiency* 12, 1065–1083 (2019). doi.org/10.1007/s12053-018-9721-x

## Public Engagement

*Nashville Food Rescue Landscape Assessment*, Nashville Food Waste Initiative (2018). [www.nrdc.org/sites/default/files/prepared-food-rescue-nashville-cs.pdf](http://www.nrdc.org/sites/default/files/prepared-food-rescue-nashville-cs.pdf)

*CoLab Radio*. [www.colab.mit.edu/colabradio-more/decolonize-science-ep1](http://www.colab.mit.edu/colabradio-more/decolonize-science-ep1)

*The Move Podcast*. [medium.com/themovemit/podcast-spotlight-emmett-mckinney-8e239e475dba](https://medium.com/themovemit/podcast-spotlight-emmett-mckinney-8e239e475dba)

## Environmental Law

McKinney, Emmett. *Performance Measurement for Environmental Compliance & Enforcement*. International Network for Environmental Compliance & Enforcement (2017)

M. Vandenberg & J. Gilligan, *Beyond Politics* (2018) [www.beyondpoliticsbook.com/](http://www.beyondpoliticsbook.com/)

United Nation Report on the Environmental Rule of Law (2019) [www.unenvironment.org/resources/assessment/environmental-rule-law-first-global-report](http://www.unenvironment.org/resources/assessment/environmental-rule-law-first-global-report)

Environmental Law Institute *Vibrant Environment Blog*: [www.eli.org/vibrant-environment-blog/](http://www.eli.org/vibrant-environment-blog/)



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