Michael Charles Bethune

- City of Pittsburgh Department of Mobility & Infrastructure: Policy Analyst
- EV Task Force lead

With a background in disability services & nonprofit sectors both nationally and internationally, Michael brings strong equity and inclusivity insights to research and policy developments to the City.

B.Sc. Psychology. Flinders University, South Australia
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DOMI Mission

Provide the physical mobility necessary to support the social and economic mobility of the people of Pittsburgh through the management, design, improvement, and operation of the public right of way.

What We Do

The Department is responsible for the transportation of people and goods throughout the City of Pittsburgh, and for managing the operation of and access to the public right-of-way (the sidewalks, curbs, streets, and bridges that make up our network).

City's Mobility Principles
1. No one dies or is seriously injured traveling on city streets.
2. Every household in Pittsburgh can access fresh fruits and vegetables within 20 minutes travel of home, without the requirement of a private vehicle.
3. All trips less than 1 mile are easily and enjoyably achieved by non-vehicle travel.
4. No household must spend more than 45% of household income to satisfy basic housing, transportation and energy needs.
5. The design, maintenance and operation of city streets reflects the values of our community.

DOMI maintains:

- 1,000+ linear miles of streets
- 2,400+ lane miles of streets
- Tens of thousands of crosswalks and pavement markings
- 800 sets of steps covering 23.3 linear miles
- ~44,000 street lighting fixtures
- 613 signalized intersections + ~10,000 traffic control fixtures
- 850,000 street signs
- ~33 miles of guiderail
- 150 bridges

PGH 2070 Mobility Vision Plan Summary [link]
The 2070 Mobility Vision Plan dares to dream. It reaches both forward and back, integrating numerous separate community-led plans, existing assets, and past wisdom into one cohesive vision for infrastructure and mobility.

1 Make meaningful changes to promote equity in infrastructure and mobility.

2 Support, pursue, and adopt fair and sustainable funding structures.

3 Dramatically reduce transportation-related carbon emissions and prepare for climate change.

4 Recognize and organize the mobility system of systems, including the movement of people, goods, and information.

5 Actively and effectively manage streets for public benefit.

6 Proactively guide and manage mobility innovation and technology to solve real problems and serve community values.

Current Relevant City Projects

SmartSpines
Broad deployment of advanced transportation technology along eight highly utilized corridors in the City of Pittsburgh.

PGH Lab
Pittsburgh's regional incubator geared innovating local government through new technologies and services to be more efficient, transparent, sustainable, and inclusive.
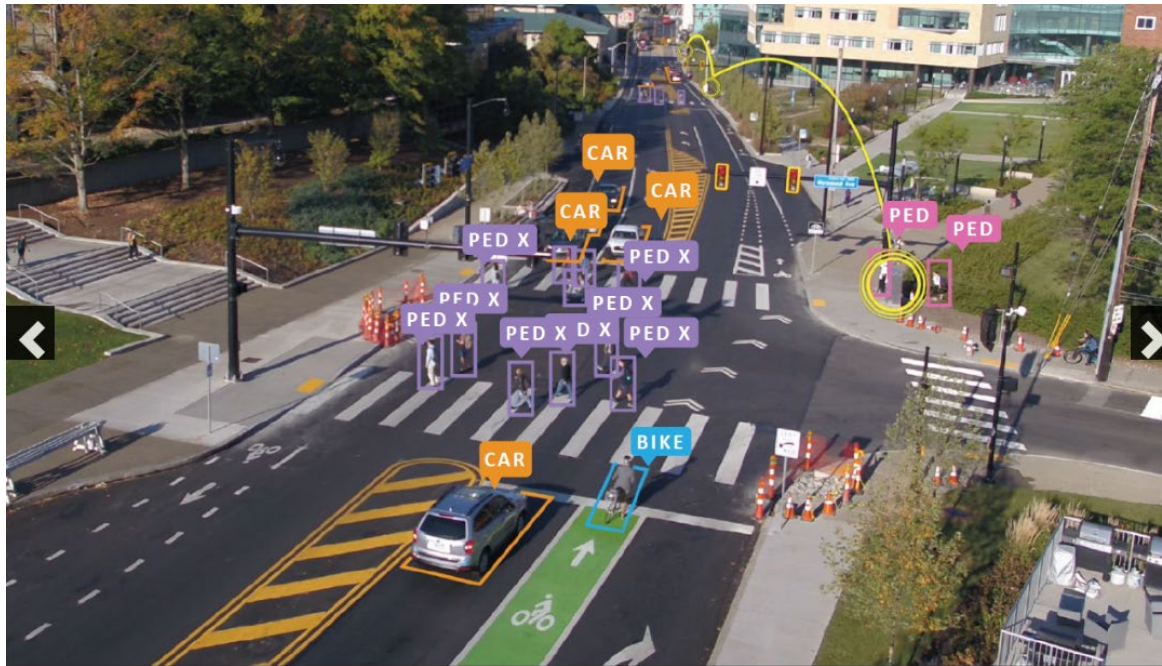
NetPGH
The comprehensive, unified fiber connectivity network for city facilities with the goal of improving efficiency in the delivery of public services.

Smart Loading Zones Pilot
A new way to manage our curb space to increase delivery efficiency and decrease congestion and emissions.

SmartSpines improvements are broadly divided into three categories:

- Signal Infrastructure Upgrades
- "Smart" Software Implementation
- Traffic Management Center (TMC) Construction

Vehicular detection technologies (in-ground loops, cameras, radar) are constantly evolving and this project will assess and implement technology that best fits Pittsburgh's needs.

Passive pedestrian detection technologies can detect the presence of pedestrians waiting to use a signalized crosswalk and provide them a pedestrian phase without the need for depression of pedestrian pushbutton. This project will assess the state of this emerging technology and how it interacts with the SmartSpines goals.

What is a Smart Loading Zone?

- Smart Loading Zones use **license plate reader** technology to automatically bill registered users for their use of a zone
- Users **must be registered** or may receive a violation
- **One time registration** unlocks use of all 47 zones

Smart Loading Zones Pilot Goals

- Improve **safety** for pedestrians, cyclists, and other curb users
- Reduce **illegal** parking and double-parking of loading vehicles by creating reliable curb access
- Increase delivery **efficiency** and reduce dwell time
- Increase parking **turnover** for restaurants and small businesses
- Align parking and loading policies with **real-time data**
- **Decrease emissions** from unnecessary idling and circling
- Use lessons learned to inform future curb management **decisions**

2HR PAID LOADING
MON - SAT
8 AM - 6 PM
REGISTRATION REQUIRED
TEXT "CURB" TO (855) 707-1211
CAMERA ENFORCED
VIOLATORS SUBJECT TO A $40 TICKET
CurbPass DOMI PARKING

SMART LOADING ZONE RATES	
0-15 MIN	FREE
15-30 MIN	max $4.00
30-60 MIN	max $8.00
60 - 120 MIN	max $12.00
CurbPass	G Pay Pay

Smart Loading Zone Results To Date

Double Parks decreased 40%
Before: 17.97 avg double parks / zone / day
After: 9.15 avg double parks / zone / day

Turnover increased 49%
Before: 25.26 avg parks / zone /day
After: 37.74 avg parks / zone /day

Average park duration decreased 23%
Before: 37.12 minutes
After: 26:56

2,800+ registered users
91% cars
7.6% vans
1% freight

Fleet Registrations
Amazon
WS Vending
Uber, Lyft, Doordash, and Grubhub

Adoption
Currently around 1-2% of parks are by registered users
Majority of parks are not paying
Revenue to date: $9,000

DOMI Sensing Opportunities and Needs in Transportation / Civil Infrastructure

Understanding the degradation of infrastructure assets ➔ *Better decision making*
    (e.g., bridges, roads, sidewalks, retaining walls)

Facilitating Pittsburgh ingenuity   ➔   *New methodologies and increased mobility equitably*
(e.g., Dig Once Policies industry,   (the region grows when we are all mobile)
university partnerships)

Other possible applications?

Bring us your ideas, let's discuss!
Let's connect with the right team and go after the right grants!