



Accelerating Active Transportation Change in Northern Virginia

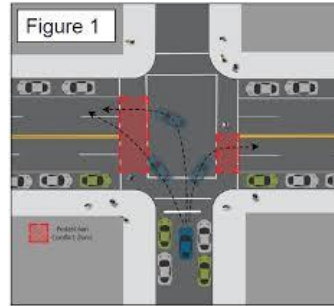
Data Analytics: Accessing
Meaningful Data and
Leveraging it

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How Cities are Using Data Analytics to Accelerate Active Transportation Change



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What is Mobility Lab?

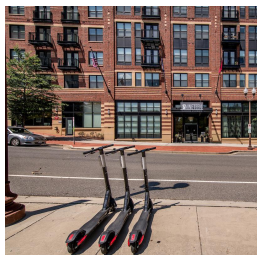
- Research Center and communication source in Arlington County
- Part of Arlington County Commuter Services (ACCS)
- Focus on Travel behavior and TDM research
- Look at best practices

<https://mobilitylab.org/>



How Cities are Using Data Analytics to Accelerate Active Transportation Change

Inform Policy



Arlington County

Shared Mobility Devices (SMD) Pilot

Inform Implementation



Lexington Avenue & 33rd Street, Manhattan

New York City

Left-turns and calming treatments

Inform Planning



Seattle

Bike and Pedestrian Safety Analysis (BPSA)

Inform Policy

Arlington County Shared Mobility Devices (SMD) Pilot

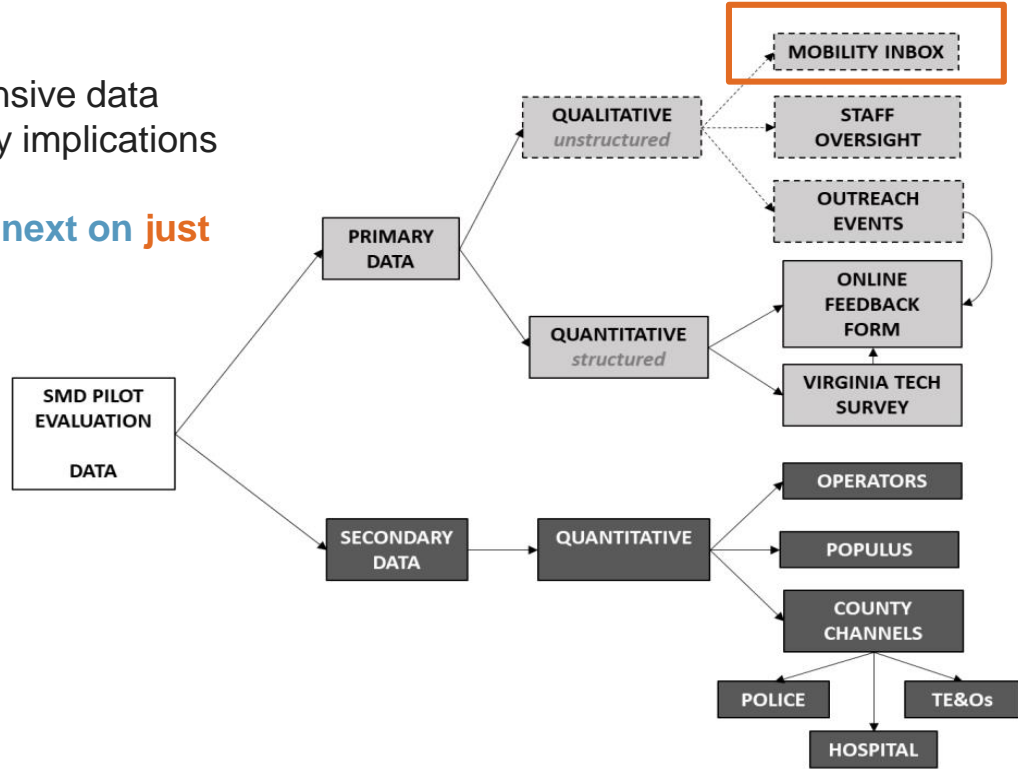
- Arlington County ran a Shared Mobility Devices (SMD) pilot from September 2018 to December 2019
 - E-scooters and dockless e-bikes
- Premise of the pilot – Use Data Analytics to Inform Policy!
 - Collect data to understand:
 - How are these new devices performing ?
 - Do they promote safety? And advance the County’s Transportation Objectives?
- Mobility Lab lead the pilot evaluation– design the research, collected and analyzed relevant data



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Arlington County Shared Mobility Devices (SMD) Pilot

- Comprehensive data
- Many policy implications
- ✓ Will focus next on just one!



- Mobility Inbox:
- County inbox for the community to comment on the pilot

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Arlington County Shared Mobility Devices (SMD) Pilot

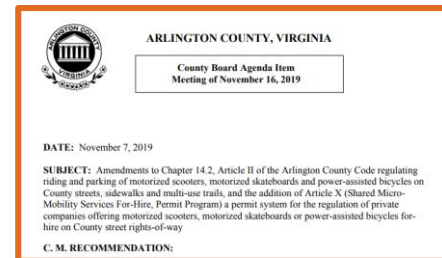
✓ Qualitative analysis of 727 emails



31% on improperly parked SMDs blocking paths on sidewalks



14% on safety hazard for pedestrians who can trip on sidewalks

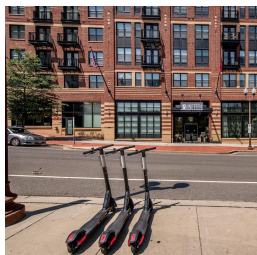


“Ordinance Should Establish Safe and Compatible Places to Park”!



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NYC's Left-Turn Calming Treatments

- 2014: Initial Data review: **Left turns are problematic!**
 - 3 times more severe injuries than right turns
 - 30% of all ped/bike injuries
- 2016: **Left Turn Pedestrian and Bicycle Crash Study (Don't Cut Corners)**
 - **Treatment evaluation:**
 - NYSDOT crash data (1996-2014)
 - analyzing 3 years before and 3 years after
 - 487 intersections where treatments were installed

	LT Ped and Bike Injuries (change)	LT Ped and Bicyclist KSI (change)
Left Turn restrictions	-41%	N/A
Left Turn Bays	-15%	N/A
Protected Bike Lanes	-15%	-53%
LT Only Signals	-33%	N/A
Leading Pedestrian Intervals	-14%	-56%

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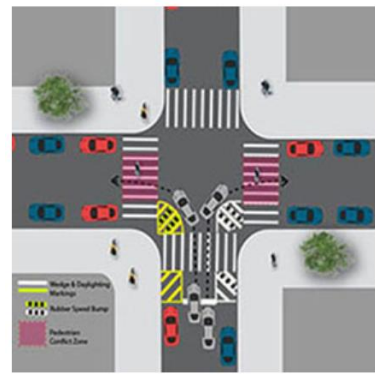
NYC's Left-Turn Calming Treatments

- DOT developed and implemented 107-intersection pilot initiative in 2016 to test Left-Turning calming treatments
 - Flexible delineators
 - Road markings
 - ...
- Evaluation: ~20% reduction in median turning speeds as well as safer turning behavior
- Calming treatments were installed at an additional 110 location in 2017

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NYC's Turn Calming Treatments

✓ *Started the Turn Calming Program...*



Lexington Avenue & 33rd Street, Manhattan

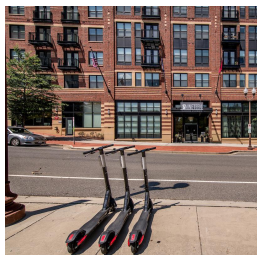
- **Ped injuries decreased by 20%**
- **Left turn speeds decreased**
 - Average LT speeds decreased by 53%
 - Maximum LT speeds decreased by 38%

Data-driven approaches accelerate change!



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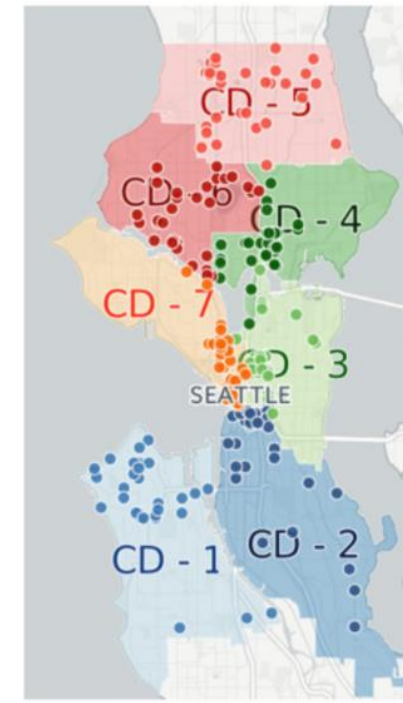
Seattle

Bike and Pedestrian Safety Analysis (BPSA)

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Seattle's Bike and Pedestrian Safety Analysis (BPSA)

- **Eliminating traffic-related deaths and serious injuries by 2030 under Vision Zero (VZ).**
- **Bike and Pedestrian Safety Analysis (BPSA):**
 - Modeling ped/bike safety - understand where, how, and why crashes happen
 - Quantitative support/justification for selecting countermeasures
- **Comprehensive Data**
 - Ped and bike crash data
 - Ped and bike volume data
 - Roadway, lighting, traffic signal presence,
 - Demographics, transit
- **Result**
 - Factors that contribute to crashes
 - Identify locations of high crash frequency



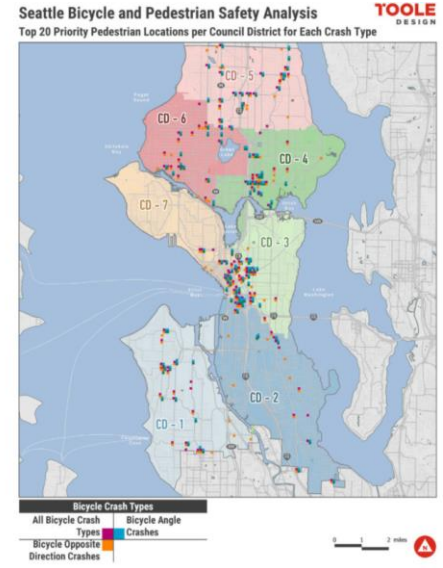
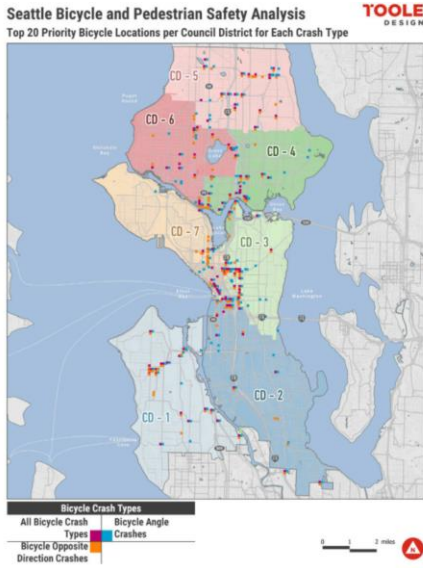
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Seattle's Bike and Pedestrian Safety Analysis (BPSA)

Integrated it into existing Complete Streets Checklist Process

- If a project includes a BPSA-identified location
- Reviewed for potential pedestrian and/or bicycle improvements.

FHWA



Making streets safer

- Improved almost 300 intersections
- 34% decrease in serious injury and fatal ped collision

Cultural shift within SDOT

- Traffic and design engineers more accepting of proposed countermeasures at sites if BPSA-identified



THANK YOU!

**Not an exhaustive review!!
Get the discussion started!
More during the Q&As....**

REFERENCES

- **Arlington County's SMD Pilot**
 - Pilot Page
 - Research report
 - County board report
- **New York**
 - NYC LT
 - LT study
- **Seattle**
 - Vision zero Initiative
 - BPSA – Phase 2
 - Toole design
 - FHWA review of the case study
- **FHWA Case Study Analyses – STEP Resources**

