Mobility Data Specification 101
Opportunities and Challenges
Evan Costagliola
Principal | Emerging Mobility Practice Co-Lead
May 14, 2019
WE PUT PEOPLE FIRST

Developing transportation systems to promote broader community goals of mobility, equity, economic development, and healthy living.
MDS 101: OPPORTUNITIES AND CHALLENGES

Learning objectives

What is MDS and why is it relevant?

Points of contention

Value for transit agencies

Future direction(s) of MDS
A COMPLEX HISTORY AND LANDSCAPE

- TNC data and missed opportunities
- Cities ask for all the data
- Agency strategic planning
- Agency data sophistication
- Growth of MaaS/micromobility and mobility consolidation
What is MDS and why is it relevant?
MDS IS A FOUNDATIONAL TOOL TO MANAGE MOBILITY SERVICES AT SCALE

INGEST  ANALYZE  MANAGE
WHAT IS THE MOBILITY DATA SPECIFICATION (MDS)?

• API for mobility data of all types (scooters, car share, ambulance, etc.)

• Real-time and historic data sharing, measurement, and regulation

• Bidirectional data flow between city and mobility provider

• All documentation, management, and collaboration on Github

• Adopted by several dozen cities
**PROVIDER API**

- **Query**

**GBFS**
Legacy bike-share format, shows available vehicle location in real-time only (no historic data).

**Trips**
Exact routes with timestamps of every trip taken. Non-real time, historic data.

**Vehicle Event and Status**
The status of the inventory of vehicles available for customer use. Events a vehicle goes through, including deployed, free, removed (e.g., maintenance, rebalance, service end, agency removal, etc). Non-real time, historic data.

**AGENCY API**

- **Query**

**Vehicle**
Real-time telemetry and status data (same as provider) on every vehicle in the fleet. Registration of vehicles that are in a city fleet.

**Service Areas**
Allows the agency to define service areas for providers in real time.
WHY MDS?

City Perspective

• Common sharing standard and format

• Data-driven policy and regulations

• Regulatory enforcement and compliance

• Tool for mobility planning and performance measurement

• Internal data competencies and capacity
WHY MDS?

Provider Perspective

• Data patchwork

• Resources to deliver data sharing requirements

• Data-driven policy and regulations

• Compliance with data sharing regulations (versus denied access to markets)

• Rebuild trust with cities
Points of contention
VARYING LEVELS OF CAPACITY AND RESOURCES

• Staff, systems, tools, and leadership

• Some open source tools (public and private)

• Use of third-party aggregators

• Varying capacity on the provider side
PRIVACY AND TRADE SECRET

• Invasion of privacy?
  o Personally-identifiable information? Or protectable trip information?
  o No standard for data obfuscation, handling, retention, and security
  o No guidance for open data cities

• Trade secret?
  o Business intelligence? Or regulatory risk?
  o Inconsistent State public disclosure laws
  o Fear of regulatory risk and operational control

• Lack of agreement across industry
GOVERNANCE AND DECISION-MAKING

• Github as policy convening

• No provider seat at the MDS governance table

• Splinter data governance and standards efforts
Future direction(s) and transit applications
MDS IN FLUX

• Learn and iterate model
  o Eight versions published to date
  o Requirements change

• Emerging policy and governance structure

• Emerging standards for data obfuscation, handling, retention, and security

• Emerging competitors to MDS
APPLICATIONS FOR TRANSIT

- Transit gaps and route planning
- Access profile
- Framework for pilot data sharing
- Parking/operational zone compliance at transit facilities
- Avenue to tether to City regulations
- Standard ask for app and payment integration
- Organizational shift around data
HOW MIGHT TRANSIT AGENCIES...

...use granular and aggregated MDS data?

...change the way it asks to collect data?

...contribute to MDS to ensure it supports agency metrics?

...supplement GTFS with MDS to zone and measure?
THANK YOU!

Evan Costagliola
206.576.9979
ecostagliola@nelsonnygaard.com