Data is a city's (and this girl's) best friend:

Managing the ROW in 2019 and beyond

Urbanism Next
Kelly Rula
May 7, 2019

City of Seattle
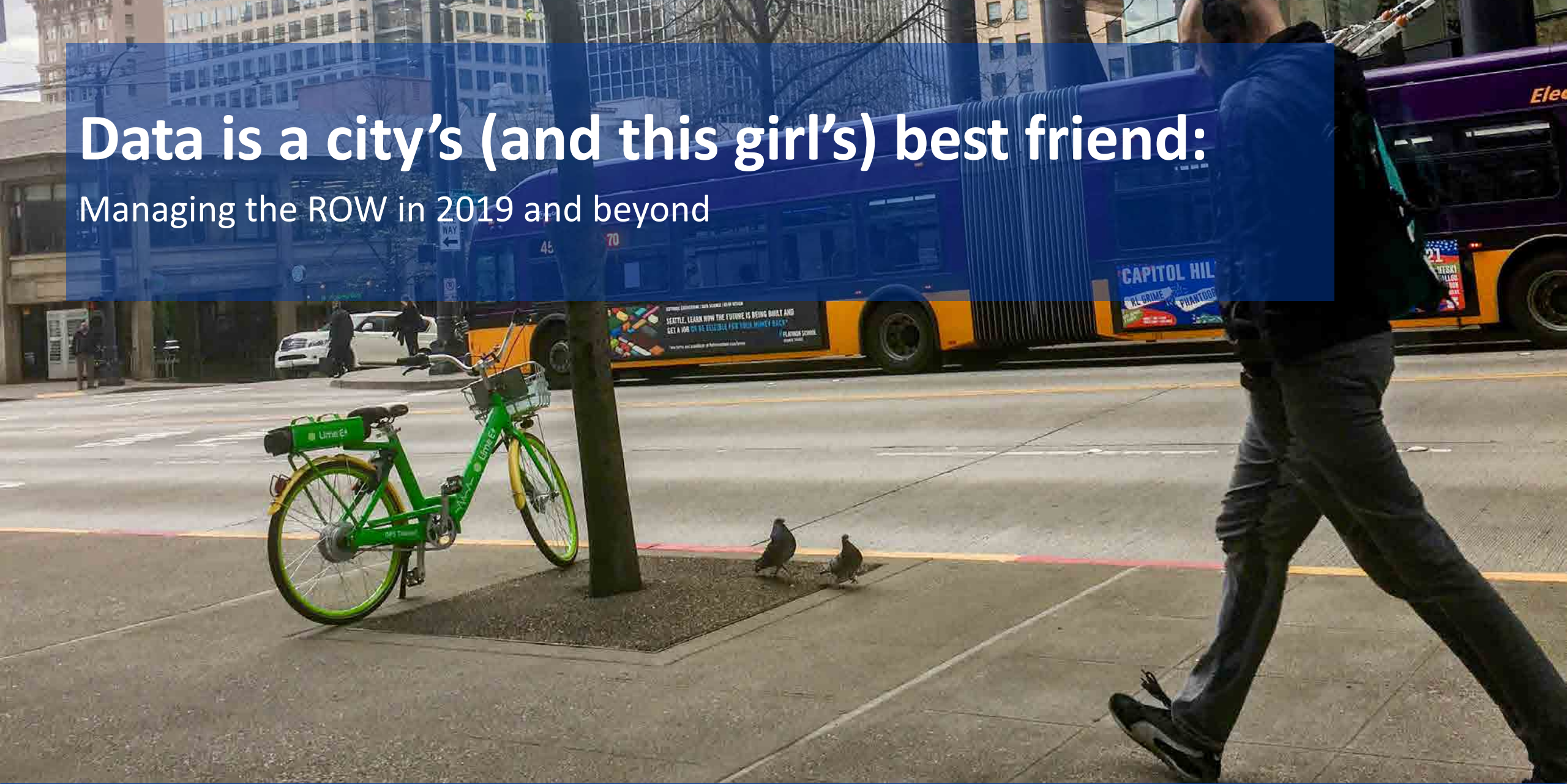
Objectives

1. Complementing active management in the physical world with digital infrastructure

2. Mobility services management

3. Other digital infrastructure examples

4. Risks

City of Seattle

Active Management

- The role of cities and DOTs: actively manage the limited public right-of-way

- What this involves: **receiving** and **giving** data

- We've been doing this for one hundred years
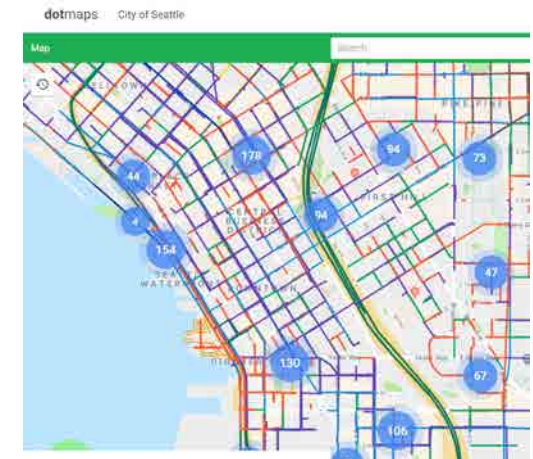
City of Seattle

Why cities need to receive data

We receive data every day that informs our work and decisions:

- Traffic flows

- Parking transactions

- Asset management

- Permit compliance

Q. What happens when we miss our chance to require data sharing from a new type of operator?

A. We end up trying to regulate something we don't fully understand (e.g., Uber).
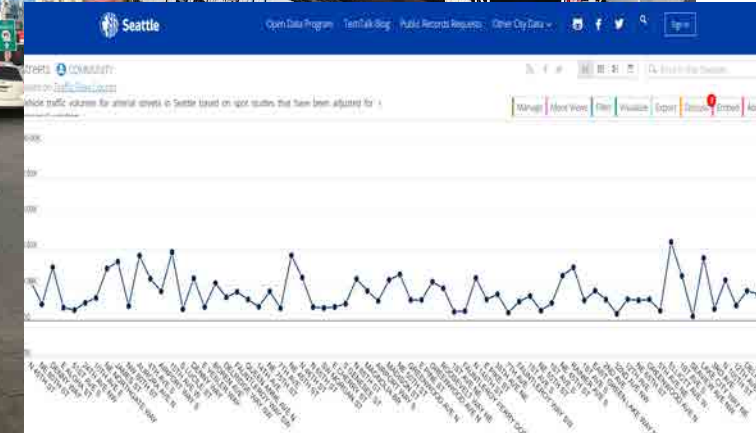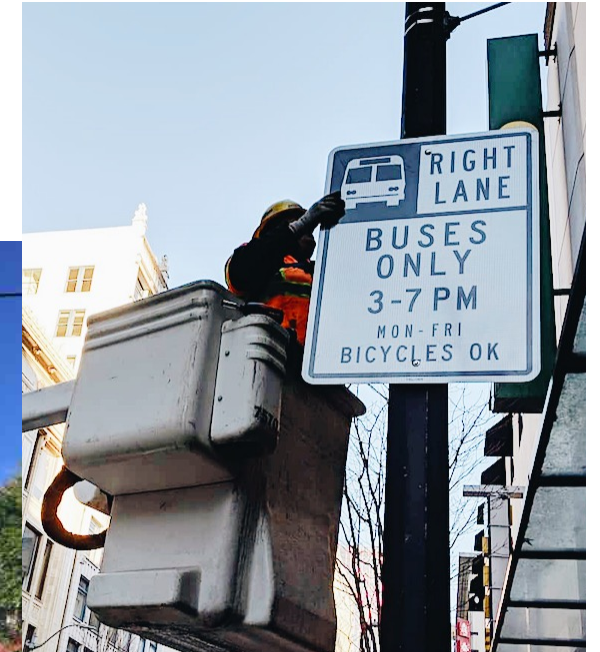
City of Seattle

Why cities need to give data

We give information and direction every day to manage the right-of-way:

- Signals
- "No parking" signs
- Dynamic message signs

Seattle is already doing this in the digital space as well:

- **Static:** Open data portal
- **Real-time:** Twitter feed, open traffic feeds

Seattle's Open Data Platform
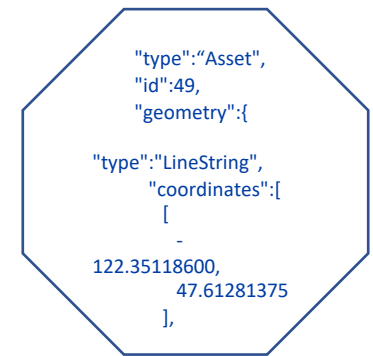
Digital Infrastructure

- Active management is traditionally achieved with physical assets (e.g., paint, signs, signals)

- Need to complement in digital space (e.g., digital replicas of physical assets)

- Common language across jurisdictions and sectors

Physical Asset

Digital Replica

"type":"Asset",
"id":49,
"geometry":{

"type":"LineString",
"coordinates":[
[
-
122.35118600,
47.61281375
],

City of Seattle
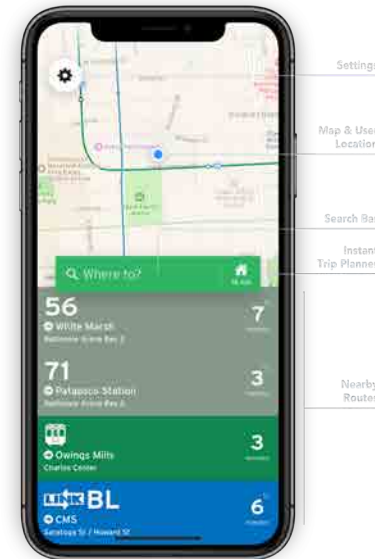
Standards and Common Languages

- Common language: consistent across jurisdictions and sectors

- Interoperability

- General Transit Feed Specification (GTFS) feeds Google, Transit App, local apps

City of Seattle
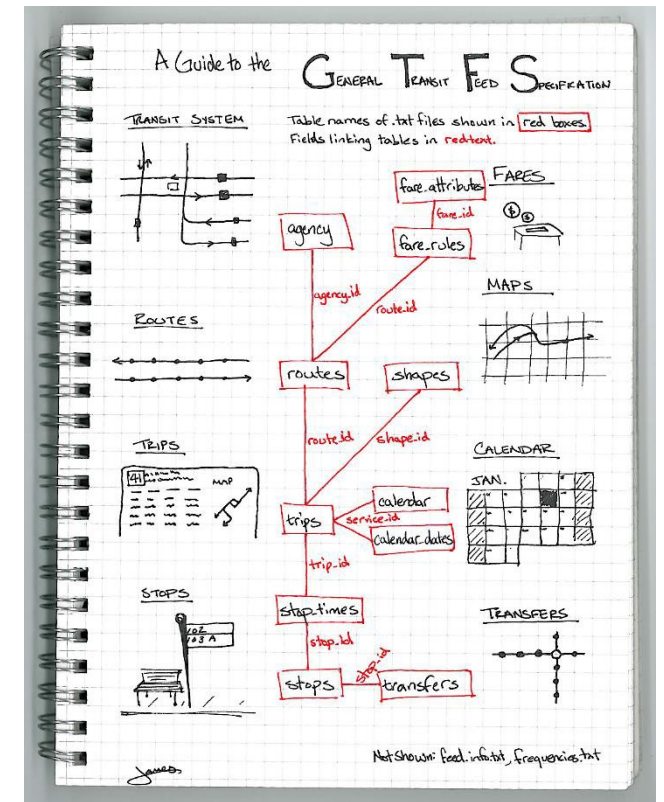
The Mobility Data Specification (MDS)

- Common language being developed by LADOT, moving to city-led governance
- Allows cities to specify what data we **receive** from and **give** to private mobility providers like bike/scooter share

City of Seattle

Receiving: Seattle is using MDS for bike share

- What we **receive**:
  - Trip records (start/end time/location)
  - Device status (available, unavailable)
- What we *could* **give:**
  - Appropriate bike parking locations
  - No-park zones
  - Speed limits

City of Seattle

Why are we using MDS for bike share?

1. **Compliance** with bike share permit
2. **Program evaluation** to determine if we are advancing our goals (allows us to update our regulations accordingly)
3. **Planning** purposes including understanding broader impacts

1. Compliance

Counts exceeding fleet compliance targets are highlighted below. This snapshot was recorded at 5:00am today.

JUMP
1151 bikes Under Minimum Threshold

LIME
3723 bikes Under Minimum Threshold
6 scooters Exeeds Maximum Threshold

LYFT
0 bikes

2. Program evaluation

MEASURES OF SUCCESS

| Measure of Success	Metrics Used	Score	Justification
Ridership	Total trips		With 468,976 rides in the pilot period, ridership showed the utility of a free-floating system.
Geographic Coverage	Amount of city covered		Bike share covered the entire city, with good ridership in many areas dock-based failed to cover. However, the far north and south portions saw little ridership and few bikes.
Equity	Coverage, usage, low-barrier options, and outreach		The evaluation showed that the system covered the entire city, but more work is needed to reduce barriers to access and ensure that bike share is an equitable system.
Safety	# of collisions per 1 million trips		With 0.01 collisions per thousand trips and no reported serious injuries, bike share is a safe mobility option.
Parking Compliance	% of bikes incorrectly parked and blocking access		While our surveys showed most bikes were parked correctly, 4% were blocking hazards. This is too many blockages.
Disabled Access	Parking issues and bike availability		Too many bikes block access, and while bikes, and especially e-bikes, can be an option for those who have difficulty walking or driving, no adaptive bikes were launched in the pilot.
Maintenance	% of bikes in good working condition, % of bikes with safety hazards	?	With limited operating funds, SDOT did not independently survey fleet maintenance. This will be an important piece of future evaluations.
Public Opinion	Favorability and issues		Our surveys showed that 74% were favorable towards the system.
Cost	Total public subsidy		Permit fees collected from the companies covered all city costs, keeping bike share free of public subsidy.

3. Planning

City of Seattle
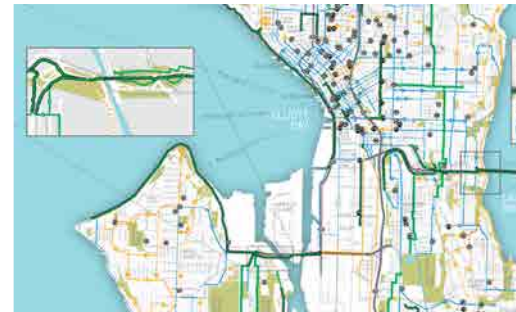
Giving: From static to streaming
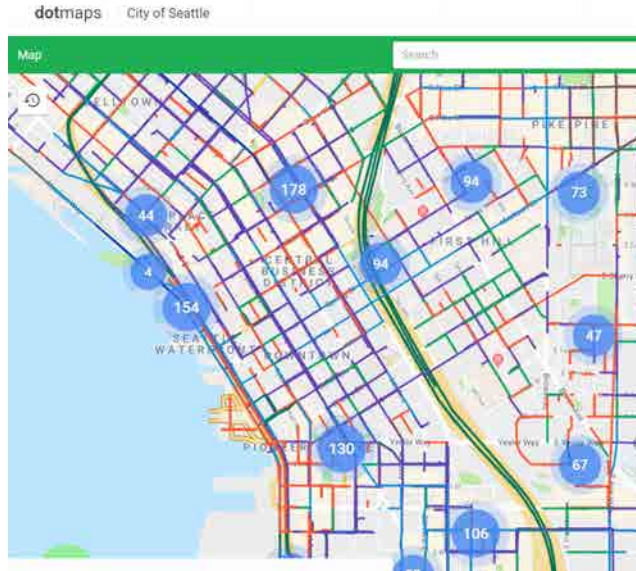
dotMaps
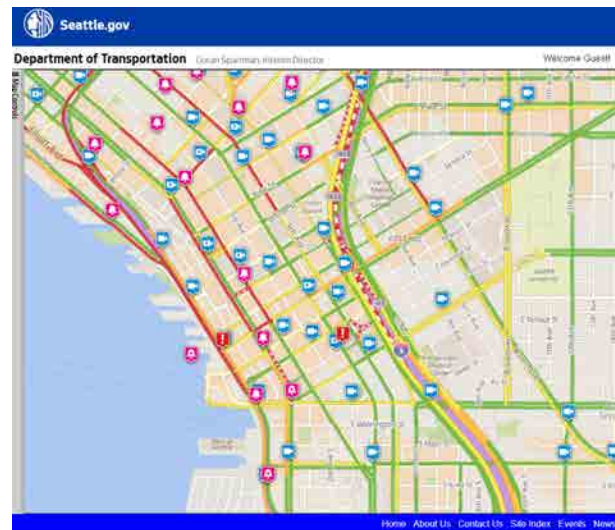
Travelers Map

{
    "type":"Feature",
    "id":49,
    "geometry":{
      "type":"LineString",
      "coordinates":[
        [
          -122.35118600400006,
          47.612813753000012
        ],
        [
          -122.35047739300001,
          47.612458618000005
        ],
        [
          -122.34890401099995,
          47.611523250999994
        ]
      ]
    },
    "properties":{
      "OBJECTID":49,

"ID":"EVT_0000000000000005667",
      "EVENT_ID":4901,
      "ACTIVE":"TRUE",

"DIRECTION":"BOTH_DIRECTIONS",
      "ON_STREET":"ALASKAN WAY",
      "FROM_STREET":"WALL ST",
      "TO_STREET":"XW BELL ST",

Why push out queryable data?

1) The City has a number of largescale, traffic-impacting events occurring over the next two years (the Period of Maximum Constraint)

-and- We wanted to reach the largest number of residents possible with information about travel disruptions

2) SDOT already collects and transmits data and information about street and traffic conditions and impacts

-but- That data exists in silos or if transmitted publicly, typically in static formats

3) SDOT seeks to test and pilot new standards, systems and tools in preparation for an uncertain future (e.g. What will AVs bring?) and broadcast policy in a "language" technology providers understand.

City of Seattle

What are the risks?

- **Non-adoption of industry standards:**
  - Lower-quality or less granular data than what we need
  - Hard to regulate what you don't understand?
  - Inability to communicate with technology providers
- **Privacy and data security:**
  - No PII (personally identifiable information) but geolocation data has been shown to be re-identifiable because where you go and how you get there may be unique to you
  - Rapidly evolving space with evolving best practices

Thank you and questions!

Kelly Rula

kelly.rula@seattle.gov | (206) 549-7579

City of Seattle